DUPLICATE

Clinical Meeting · Seattle · November 27-30, 1956

This Issue Exceeds 175,000 Copies

UNIVERSITY OF MICHIGAN
MEDICAL LIBRARY

THE JOURNAL

OF THE

American Medical Association

SEPTEMBER 1, 1956

ORIGINAL ARTICLES

URINARY TRACT INFECTIONS CAUSED BY ANTIBIOTIC-RESISTANT COLIFORM BACILLI 1
W. M. M. Kirby, M.D., D. O. Corpron, M.D., and D. C. Tanner, M.D., Seattle

PULMONARY CONGESTION AND EDEMA IN UREMIA 5
S. W. DePass, M.D., Joseph Stein, M.D., M. H. Poppel, M.D., and H. G. Jacobson, M.D., New York

USE OF THE C-REACTIVE PROTEIN TEST AS A SCREENING PROCEDURE FOR BLOOD DONORS 9
E. M. Knights Jr., M.D., Merrill Hutchins, Sc.B., Eugene Morgan Sc.B., and Jaan Ploompuu, Sc.B., Detroit

PREVENTION OF RECURRENT ATTACKS OF RHEUMATIC FEVER 13
B. L. Landrum, M.D., Chicago, and Charlotte Kobrin, M.S.W., Bartlett, Ill.

FULL-TIME CLINICAL FACULTY 16
J. C. Hinsey, Ph.D., New York

ESSENTIALS OF A RESIDENCY PROGRAM IN GENERAL PRACTICE 19
L. F. Rittelmeyer Jr., M.D., Jackson, Miss.

REVERSIBLE POSTOPERATIVE NEUROLOGICAL SYMPTOMS 22
L. G. Bartholomew, M.D., and D. A. Scholz, M.D., Rochester, Minn.

THE ROLE OF REHABILITATION IN A PROGRAM FOR HANDICAPPED CHILDREN 26
H. M. Wallace, M.D., J. S. Tobis, M.D., R. S. Siffert, M.D., M. A. Losty, R.N., and C. H. Elledge, M.S.W., New York

CLINICAL NOTES

SERUM PROTEIN CHANGES IN SUBACUTE THYROIDITIS 31
G. N. Stemmermann, M.D., Hilo, T. H.

HYALURONIDASE AS AN ADJUVANT IN INSULIN SHOCK THERAPY 32
Milo Tyndel, M.D., Ph.D., Brandon, Manitoba, Canada

SPECIAL ARTICLE

DEFENSIVE ASPECTS OF BIOLOGICAL WARFARE 34
A. G. Wedum, M.D., Frederick, Md.

SPECIAL REPORT
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES 37

EDITORIALS

Deliver Us from Evil 38
T. A. Dooley, M.D.

Medical Examiner Versus Coroner System .. 40

ORGANIZATION SECTION

The Scientific Exhibit at Chicago 41
Actions by Board of Trustees 43
Results of Examination of Physicians at Chicago Meeting 44
Joint Blood Council Meeting in Chicago 44

REGULAR DEPARTMENTS

Medicine and the Law: Right of Non-Staff Member to Treat Patients in Public Hospitals 45
Medical News 47
Correction 51, 55
Examinations and Licensure 51
Deaths 52
Foreign Letters:
Austria: Endocranial Complications in Otorhinolaryngology. Oxygen Therapy in Failure of the Peripheral Circulation 56
Belgium: Infectious Embryopathies. Children of Tuberculous Parents. Androgenic Smears. Herniation of the Nucleus Pulposus. Lead Poisoning. Medical Inspection in Schools 57
Brazil: Blood Groups 57
Canada: Carbutamide. C.M.A. Annual Meeting. Traffic Accidents. College of General Practice 57
France: Complications After Smallpox Vaccination. Psoriasis 58
India: Leukoderma. Activity of the Adrenal Cortex. Congestive Heart Failure. Serum Cholinesterase 58
Norway: Campaign Against Obesity 59
Sweden: Driving Licenses for Diabetics. Pulmonary Tuberculosis Relapses. Asbestosis 59
Switzerland: Medical Education. Swiss Tuberculosis Association 59
United Kingdom: Toxicity of Carbimazole. Serum Proteins in Pulmonary Tuberculosis. Report of British Empire Cancer Campaign. Bacillary Dysentery 60
Correspondence:
Whole Blood Clotting. Toxic Effects of Ammonium Chloride. Simple Device for Providing Humidified Oxygen. Treatment of Early Mammary Cancer. The Autopsy. Granuloma of Axillas. Foreign Body of Long Standing 63
Miscellany:
Operation Laos 65
Medical Literature Abstracts 67
Book Reviews 79
Queries and Minor Notes:
Acetylsalicylic Acid (Aspirin) and Anticoagulants. Sedation Before Electroshock Therapy. Conjunctival Sensitivity to Tobacco Smoke. Slide Culture for Tubercle Bacilli. High Blood Cholesterol Level. Treatment of Ascariasis. Antihypertensive Mixtures. Candida Infection of Bladder. Precordial Pain in Morphine Addict. Preparation of Skin for Surgery. Sensitivity to Aminopyrine. Kerosene Swallowed by Children. Intelligence Tests. Transfusions. Feet of Dancers. Diethylstilbestrol for Orchitis. Care of Newborn Infants. Subjectively Audible Pulsations. Sensitivity to Aspirin. Joint Pain in Patient with Purpura 81

WASHINGTON NEWS

Federal Aid to Medical Education. Medical Sections of Republican Platform. Meeting of Council on Research Facilities. Progress in Atomic Research. Miscellany ..... Adv. Page 21
Meetings ..... Adv. Page 26
Magazine-Television Report ..... Adv. Page 28
From Other Pages ..... Adv. Page 32
State Medical Associations ..... Adv. Page 34
Tonics and Sedatives ..... Adv. Page 46
The Bright Side ..... Adv. Page 68
Index to Advertisers ..... Adv. Page 74

Volume 162, No. 1 Published Weekly at 535 North Dearborn Street, Chicago 10, Illinois. Subscription, $15. Single Copy, 45 cents.

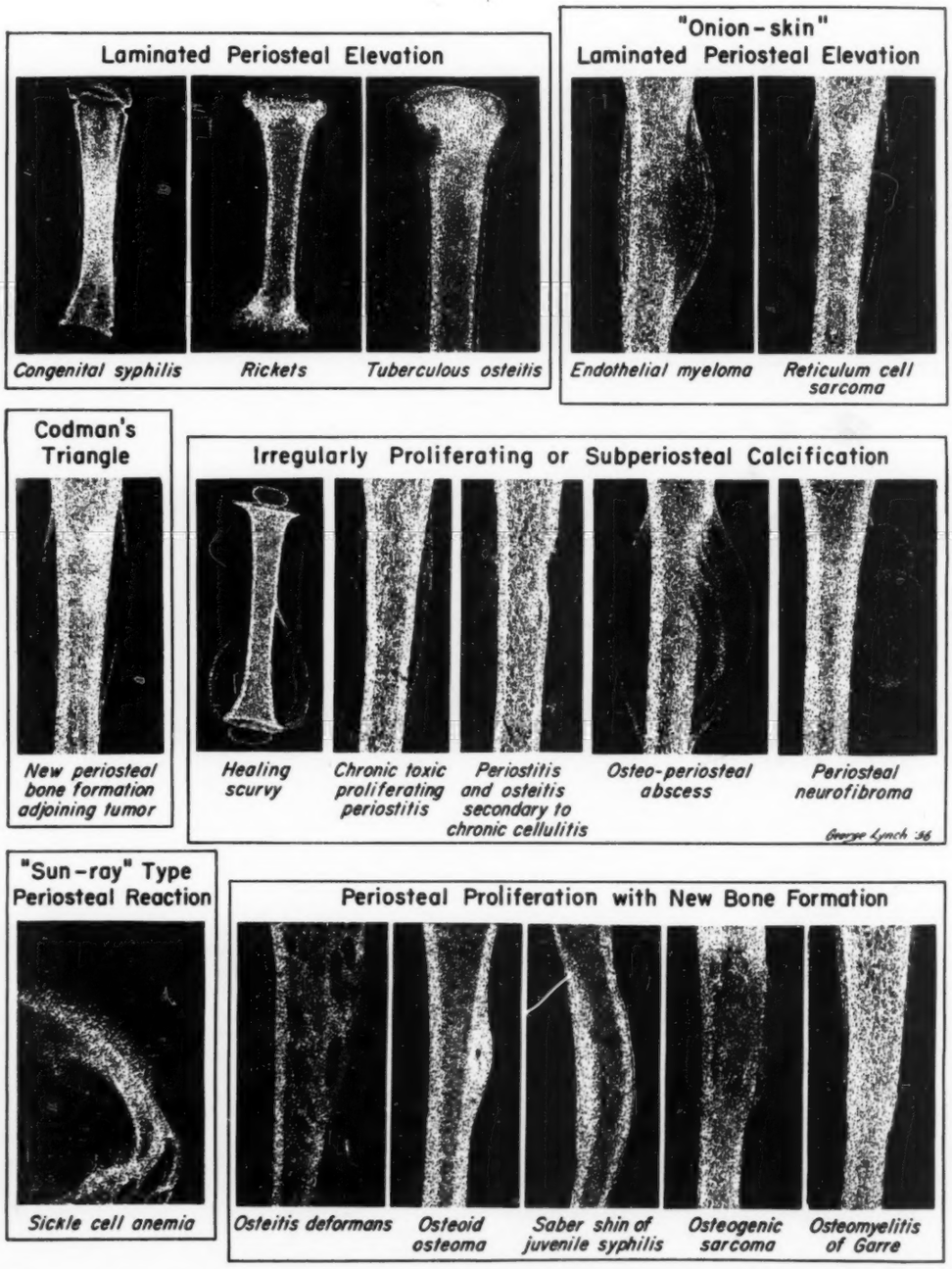
Meschan's **Roentgen Signs in Clinical Diagnosis**

A NEW BOOK! Puts X-ray diagnosis for the entire body on a remarkably useful basis—permitting you to look up objective roentgen criteria without necessarily knowing the disease represented.

See **SAUNDERS** *Advertisement on next 2 pages*

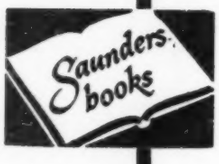
Roentgen Signs in

A book valuable each time you look at X-ray evidence from **SAUNDERS** just ready!



Diagrams showing various representative types of periosteal elevation and subperiosteal calcification.

Hundreds of graphic and descriptive drawings like this help to show what is significant in radiologic examination



THE JOURNAL of the American Medical Association is published weekly by the American Medical Association. Subscription price, $15.00 a year, 45c a copy. Canadian $17.00. Foreign $21.50. Application for re-entry as second class matter June 11, 1956, at the Postoffice at Dayton, Ohio, under act of March 3, 1879. Address all communications to American Medical Association, 535 N. Dearborn St., Chicago 10, Illinois

Clinical Diagnosis

X-ray diagnosis organized so you can identify a disease pattern without necessarily suspecting a specific cause

By ISADORE MESCHAN, M.A., M.D.

with the assistance of R.M.F. FARRER-MESCHAN, M.B., B.S.

This unique new book is one of the most effective aids to successful X-ray diagnosis yet developed. It largely eliminates the need to know or strongly suspect the patient's disease before you can evaluate his X-ray film. This book is organized by type of X-ray appearance rather than by disease—permitting you to study films objectively and use them as a dynamic element toward arriving at a diagnosis—rather than as mere confirmation of suspicions.

Radiologic aspects of the entire body and attendant disease entities are covered. The author shows you *why* the image appears as it does. He explains structural changes accounting for altered radiographic appearance and classifies signs in terms of changes in size, contour, architecture, density, position and function. This approach helps you to more readily identify the disease pattern and understand the pathologic process involved. The stage of the disease becomes more readily evident. Explicit line drawings accompanying most X-ray films give a quick schematic picture of the pathology involved.

In each body area the author discusses first the particular technical aspects of radiography. He covers positioning of patient, exposures, contrast media needs, etc. Next, the anatomy of the region is reviewed and how to make a routine examination is outlined. Lastly, for each of the disorders that may affect the area, there is specific information on: (1) *X-ray appearance of lesion* (2) *Pathologic Physiology of lesion as it affects X-ray appearance* (3) *The healing process and its roentgenographic manifestations* (4) *The significance of the various findings* (5) *Features differentiating the particular disease from others with which it may be confused.*

For General practitioners, specialists and radiologists seeking a book of objective roentgen criteria on which to base unusually revealing diagnoses—this new work is unmatchable.

A Few of the 204 Individual Topics Discussed

How to choose X-ray equipment for particular needs
Protection of patient and physicians in X-ray Diagnosis
Roentgen signs of bone pathology
Bone change related to adjoining structures
Radiolucent bone diseases
Radiographic examination of a joint
Important cephalic indices
Neoplasms of the brain
Abnormalities of spine curvature
Radiographic classification of pleural disease
Scattered, ill-defined shadows in pneumonic diseases
Roentgen signs in lesions of the lungs
Methods and techniques of cardiac examination
Recognition of congestive failure
Abnormalities of gas pattern in abdominal survey
The intravenous and retrograde pyelogram
Radiographic signs of abnormal gallbladder
Signs of gastroduodenal disease
Disease entities of the colon
Radiography in obstetrics and gynecology

By ISADORE MESCHAN, M.A., M.D., Professor and Director of the Department of Radiology at the Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, North Carolina. With the assistance of R.M.F. FARRER-MESCHAN, M.B., B.S. 1056 pages, 6½" x 10", with 666 illustrations on 333 figures. About $20.00. *Just Ready!*

Order this New Book Today!

W. B. SAUNDERS COMPANY West Washington Sq. Phila. 5

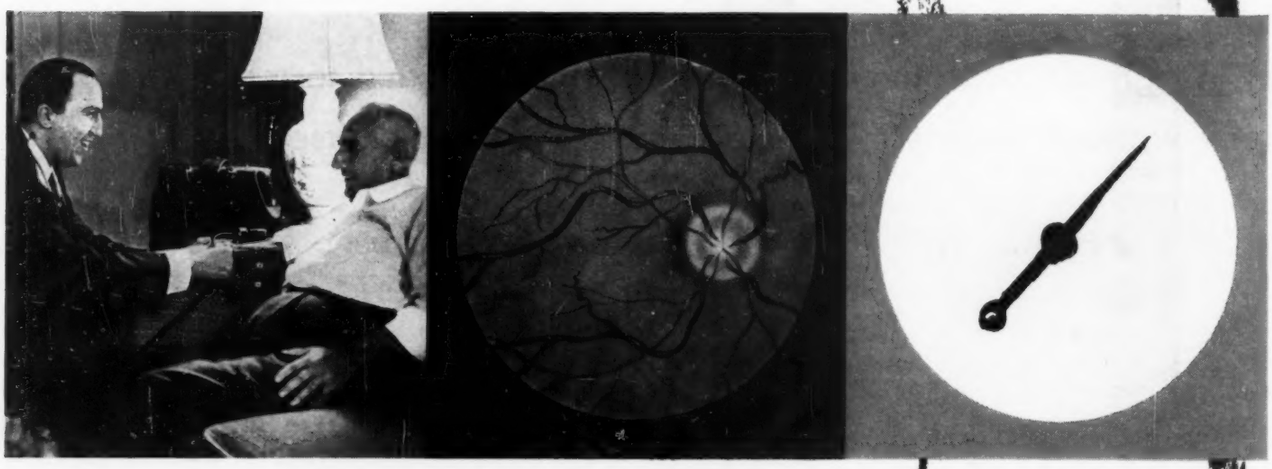
Please send and charge my account: ☐ Easy Payment Plan

MESCHAN'S ROENTGEN SIGNS IN CLINICAL DIAGNOSIS.....About $20.00

Name.....

Address.....9-1-56

a comprehensive plan to control



For many cases of mild to moderate hypertension—

Serpasil®

(reserpine CIBA)

In many cases of hypertension, Serpasil alone reduces blood pressure gradually and effectively to desired levels. In addition, Serpasil tranquilizes the patient, lessening anxiety and tension. When the more powerful antihypertensive, Serpasil-Apresoline, is indicated, priming therapy with Serpasil adjusts the patient to the physiologic milieu of lower pressure.

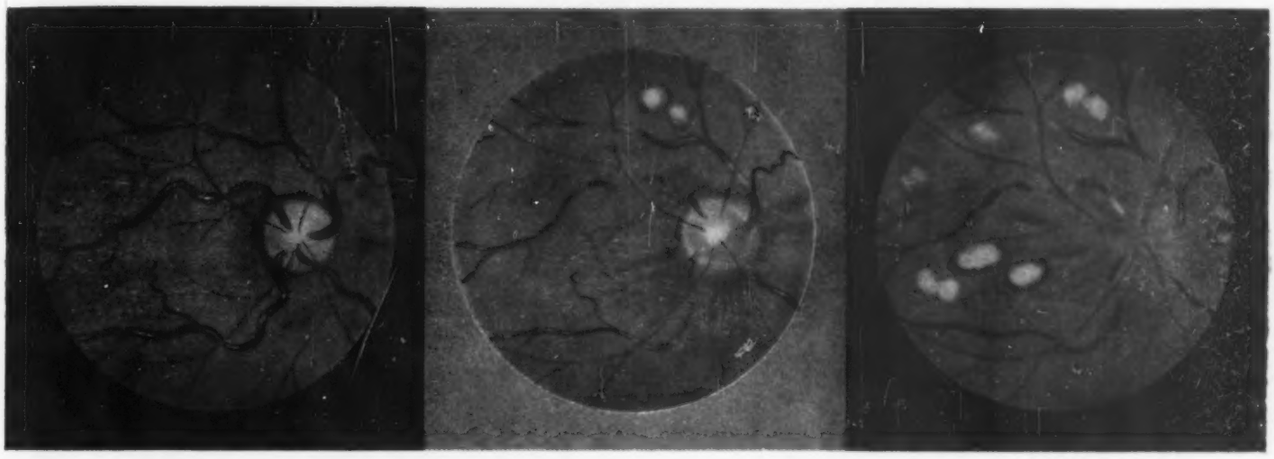
Dosage Plan: Serpasil

1. Start with Serpasil alone, 0.5 mg. daily.
2. Continue for 10 to 20 days. If results prove satisfactory—as they will in many cases—no other medication is required. *Later the Serpasil dosage may be reduced to as little as 0.1 mg. daily for maintenance.*

Tablets: 0.1 mg. (white), 0.25 mg. (white, scored), and 1.0 mg. (white, scored).
Elixir: 0.2 mg. per 4-ml. teaspoonful.
Parenteral Solution: 2.5 mg. per ml., in 2-ml. ampuls.

CIBA
SUMMIT, N.J.

all categories of hypertension...



For moderate to severe refractory hypertension—

Serpasil®-Apresoline®

hydrochloride

(reserpine and hydralazine hydrochloride CIBA)

When the reduction of blood pressure is a therapeutic imperative, Serpasil-Apresoline can be relied upon for potent antihypertensive action. The benefits of this combination include...

- combined central and peripheral antihypertensive activity
- reduction of systolic and diastolic pressure
- low incidence of side effects
- slowing of heart rate
- improvement of renal blood flow
- significantly lowered dosage levels of the constituent drugs

Dosage Plan: Serpasil-Apresoline

3. Should more than the central antihypertensive effect of Serpasil be required, combined central and peripheral antihypertensive therapy with Serpasil-Apresoline *standard-strength* should be initiated—one tablet 4 times a day.

4. When reduction of dosage is indicated, Serpasil-Apresoline *half-strength* should be used—one tablet 4 times a day.

Tablets Standard-strength (scored), each containing 0.2 mg. Serpasil and 50 mg. Apresoline.
Tablets Half-strength (scored), each containing 0.1 mg. Serpasil and 25 mg. Apresoline.

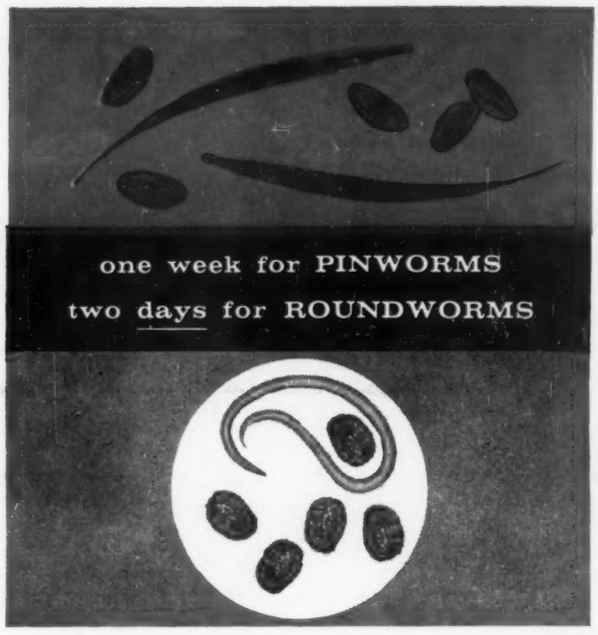
2/2256M

*Syrup of 'Antepar' Citrate
brand Piperazine Citrate
100 mg. in each cc.

*Tablets of 'Antepar' Citrate
brand Piperazine Citrate
250 and 500 mg., scored

Pads of directions sheets for patients available on request.

EFFECTIVE
ANTHELMINTIC
for PINWORMS
and ROUNDWORMS



children like it

'Antepar'®*

BURROUGHS WELLCOME & CO. (U. S. A.) INC., Tuckahoe, New York

Parents say--
Kids love 'em!
Doctors say--
Worms* hate 'em!

*Pinworm—Roundworm

Piperazate™ Wafers

piperazine phosphate, Leeming, 500 mg.

Thos. Leeming & Co. Inc. New York 17, N.Y.

Letter to America's Anesthesiologists:

You are the doctors whom patients seldom remember, and you are probably the busiest men in medicine. You have a drum-tight work schedule. Your spare time is severely limited because you are outnumbered thirteen to one by surgeons and other specialists who depend daily on your special knowledge and skills.

As all doctors nowadays, you find it difficult to keep abreast of the constant progress reported in current literature.

The latest volume of the *Quarterly Cumulative Index Medicus* (which is for 1953, when there were only half as many anesthesiologists in the U. S. as there are now) reveals that your specialty was publishing papers at the rate of one thousand a year in more than two hundred medical journals throughout the world . . . eight thousand pages a year.

The sad fact is that if you subscribe to ten journals publishing the greatest number of papers on anesthesiology in the United States and Britain, *you are missing 78% of the literature.*

For the past few years we of The Williams & Wilkins Company have been aware of this problem and have been encouraged to prepare at least a partial solution, which follows.

In February 1957 we will begin publication of *Survey of Anesthesiology*, a bimonthly periodical patterned after three other survey journals which we publish and which have been well received by other specialties.

Survey of Anesthesiology will be edited by a highly competent writer, teacher and practitioner, Dr. C. R. Stephen, who is Professor of Anesthesiology at Duke University School of Medicine. With the help of a carefully chosen board of editors, Dr. Stephen will scan the literature for important contributions. The best of this material will then be—not abstracted or summarized—but *condensed* so as to be considerably shorter but still retain the full importance of the original paper.

To this condensation will be appended editorial comment which will evaluate the paper, perhaps relating it to previous work or warning of possible hazard. Or, the comment may link research to practice.

Now you have the essence of *Survey of Anesthesiology.*

There will be other valuable features, but we invite you to discover them at no risk whatever to yourself. For details of our offer, read the coupon below.

THE WILLIAMS & WILKINS COMPANY

The Williams & Wilkins Company
Mount Royal and Guilford Avenues
Baltimore 2, Maryland

Gentlemen:

You may enter my subscription to Survey of Anesthesiology, *the first issue of which will be published in February 1957. I enclose full subscription payment of $10.00 for the first annual volume of six bimonthly issues. I do so with the express understanding that if I am not completely satisfied with the first issue, you will refund the entire subscription payment I have enclosed, upon notification within two weeks after I have received the first issue. I understand further that whether or not I wish to continue as a subscriber, I am to keep the first issue of* Survey of Anesthesiology *without any obligation whatever.*

NAME_____

ADDRESS_____

CITY_____ ZONE____

STATE_____

SPECIATY_____

JAMA 9-1-56

when the patient's anxiety is complicated by depression . . .

both symptoms often respond to

THORA-DEX*

(a combination of Thorazine† and Dexedrine‡)

'Thora-Dex' is a combination of a specific anti-anxiety agent, 'Thorazine', and a standard antidepressant, 'Dexedrine'. The preparation is of unusual value in mental and emotional disturbances and in somatic conditions complicated by emotional stress—especially when depression occurs together with anxiety, agitation or apprehension.

The patient treated with 'Thora-Dex' is generally both calm and alert . . . with normal interest, activity and capacity for work.

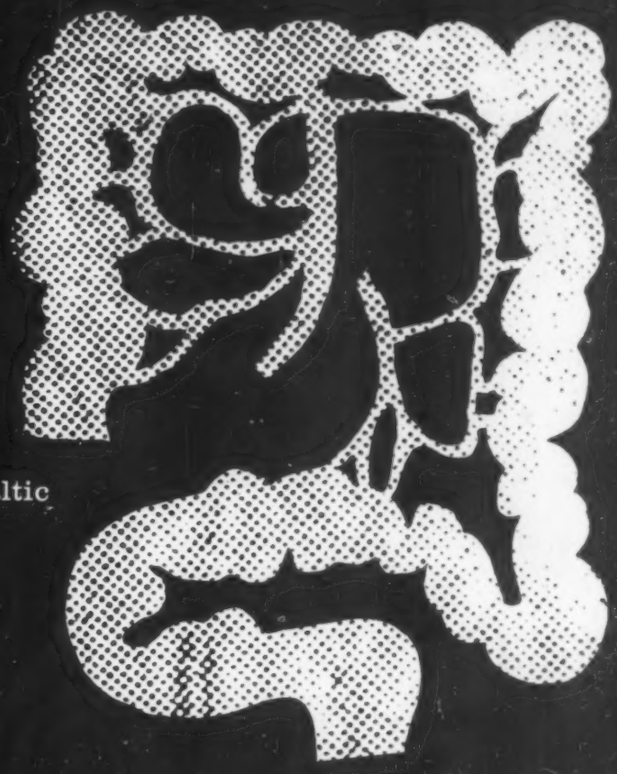
Smith, Kline & French Laboratories, Philadelphia

'Thora-Dex' Tablets are available in two strengths:

10 mg. 'Thorazine'	25 mg. 'Thorazine'
2 mg. 'Dexedrine'	5 mg. 'Dexedrine'

'Thora-Dex' should be administered discriminately and, before prescribing, the physician should be fully conversant with the available literature.

*Trademark †T.M. Reg. U.S. Pat. Off. for chlorpromazine, S.K.F.
‡T.M. Reg. U.S. Pat. Off. for dextro-amphetamine sulfate, S.K.F.



Specific Large Bowel Neuroperistaltic

Senokot®

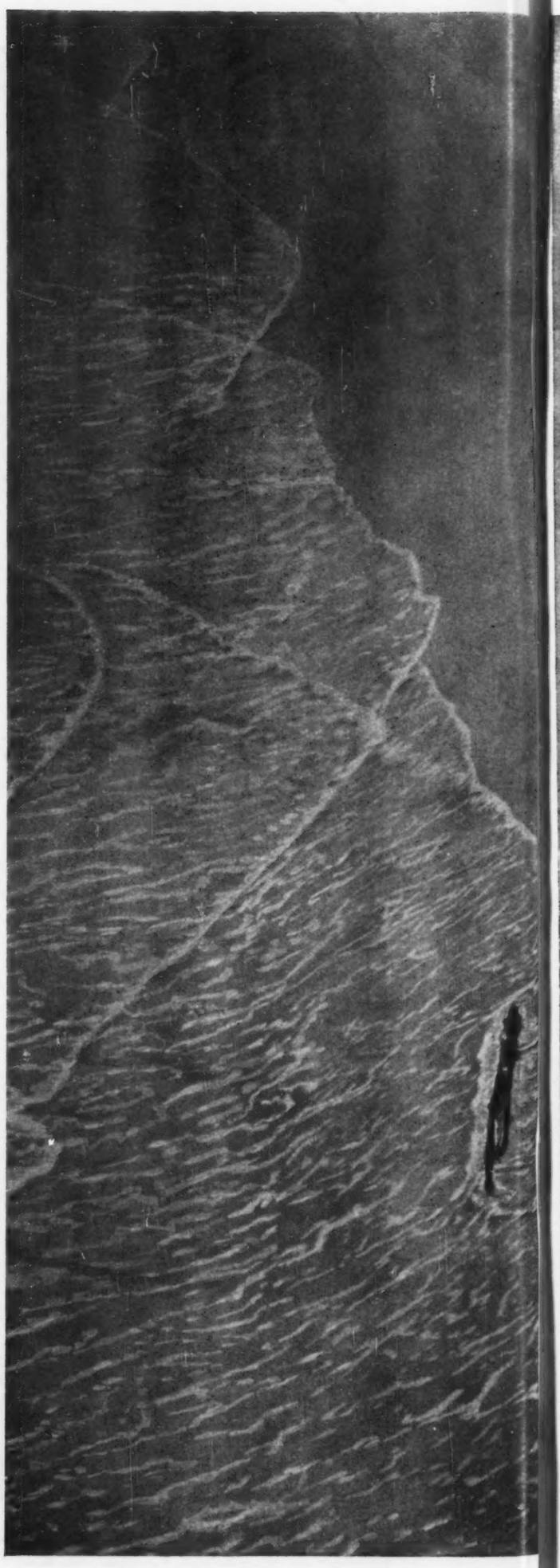
ACHROMYCIN*

HYDROCHLORIDE
TETRACYCLINE HCl *LEDERLE*

ACHROMYCIN is unsurpassed in its range of effectiveness. Each successive month more physicians are confirming this fact for themselves in their own daily practice in the therapy of respiratory, genitourinary, dermatologic and other infections. No matter what your field or specialty, when prescribing an antibiotic remember ACHROMYCIN.

ACHROMYCIN can be of service to you because of these important advantages:

- true broad-spectrum action
- rapid diffusion and penetration
- prompt control of infection
- proved effective against a wide variety of infections caused by Gram-positive and Gram-negative bacteria, rickettsiae, and certain viruses and protozoa
- side effects, if any, usually minimal
- produced under exacting quality control in Lederle's *own* laboratories and offered *only* under the Lederle label
- a *complete line* of dosage forms



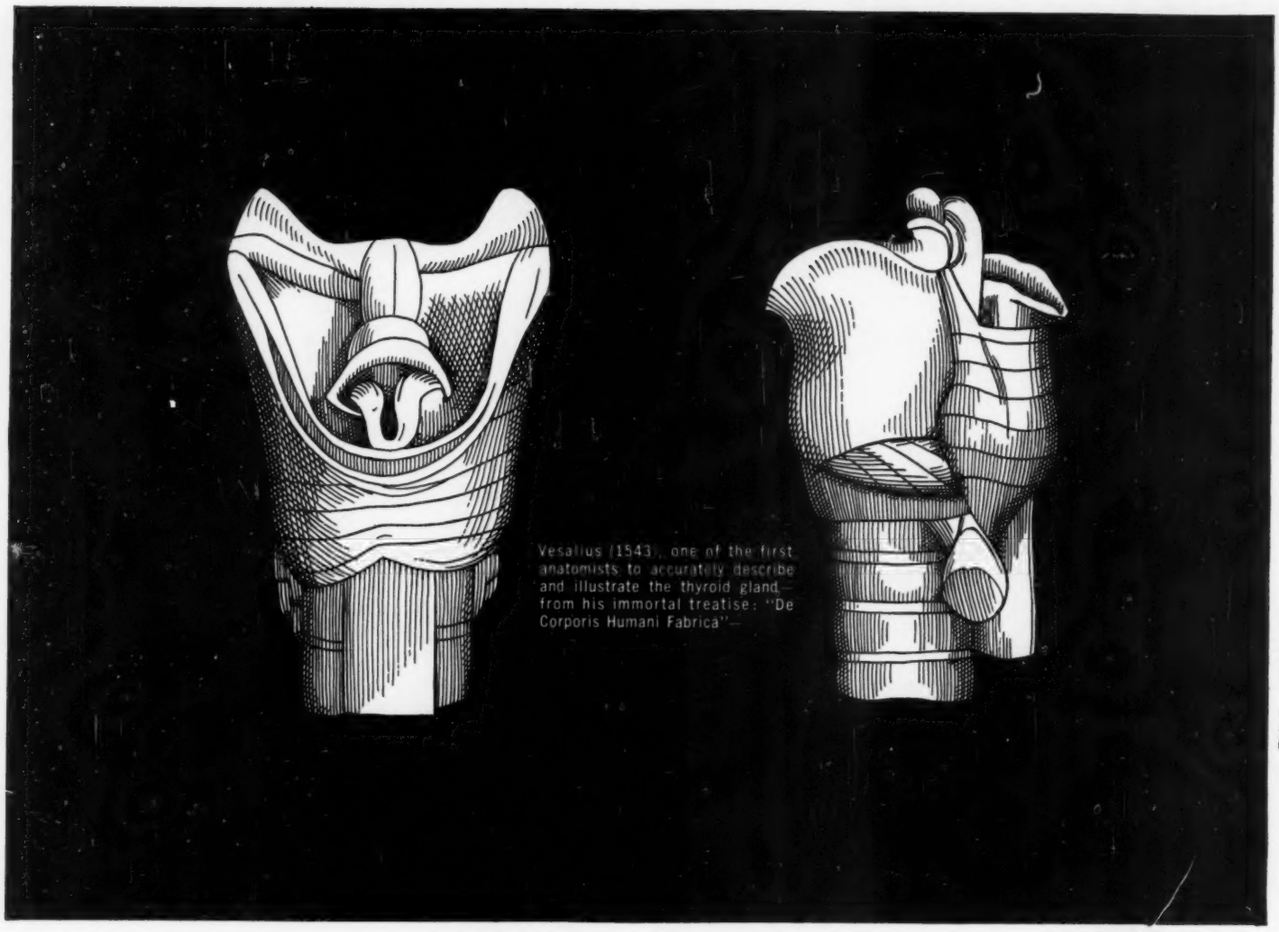
LEDERLE LABORATORIES DIVISION
AMERICAN CYANAMID COMPANY
PEARL RIVER, N. Y.

Lederle

*REG. U. S. PAT. OFF.

PHOTO DATA: 8 X 10 GROVER VIEW CAMERA
100 SEC. AT F.22 EXISTING LIGHT

ACHRONYCIN



Vesalius (1543), one of the first anatomists to accurately describe and illustrate the thyroid gland—from his immortal treatise: "De Corporis Humani Fabrica"—

The Thyroid Gland

Thyroid substance for oral therapy was introduced shortly before the turn of the century. It was with Armour's thyroid that many of the earliest studies were made.

Possessing the advantage of access to tremendous supplies of raw material Armour, through the intervening years, has been uniquely qualified to pioneer in thyroidal research, to perfect better methods of selecting animal gland substances, to overcome basic seasonal and geographic variations in potency and to establish more accurate standardization methods.

Adequate thyroid therapy in indicated conditions can be dramatic. "There are few conditions more easily controlled than the hypothyroid state. It is reversible, reacting swiftly to adequate thyroid substitution."*

Specify

Armour Thyroid—
Prepared from government inspected glands and standardized in accordance with U.S.P. XV.

or

The Premier **thyrar®**,
exclusively "quick frozen" beef thyroid. Tested biologically for antigoiterogenic activity.

THE ARMOUR LABORATORIES
A DIVISION OF ARMOUR AND COMPANY · KANKAKEE, ILLINOIS

*Levitt, T.: The Thyroid, London, E. and S. Livingstone, Ltd., 1954, p. 360.

NOW— DISPOSABLE OTOSCOPE SPECULA

• Use a speculum once • Throw it away • Replace it instantly with a new one. That's the simple, sensible procedure you follow with new Welch Allyn KLEEN-SPEC otoscope specula. Gone is the danger of cross-infection, the nuisance of sterilization. Gone the problem of having enough clean specula. Packed in transparent tubes of 40 each, KLEEN-SPEC specula are $3.25 for 200.

You can use new KLEEN-SPEC disposable specula on your present Welch Allyn otoscopes with a simple, inexpensive adapter which costs only $2.00.

Or, you may prefer the completely new Welch Allyn No. 251 otoscope head, designed especially for use with KLEEN-SPEC disposable specula. It weighs only half as much as its predecessor, has clean modern lines and improved illumination. It fits all standard Welch Allyn battery handles. The No. 251 head, with 400 KLEEN-SPEC disposable specula, is $20.50.

REVERSE LIP AT DISTAL END of the KLEEN-SPEC speculum protects interior of permanent speculum from soiling, as shown in this cut-away view.

Welch Allyn No. 201 and No. 216 otoscopes may be easily adapted for use with KLEEN-SPEC disposable specula, as shown.

Draw a fresh, new KLEEN-SPEC speculum from convenient push tube.

Press into place on permanent inner speculum and use.

Remove used speculum by pulling tab and discard. The whole process takes less time than changing old style specula.

A major advance in instrument design by

WELCH ALLYN

that the epileptic patient

may enjoy fuller life

DILANTIN® SODIUM

(diphenylhydantoin sodium, Parke-Davis)

For patients with grand mal and psychomotor seizures,

DILANTIN — alone or in combination — continues as an anticonvulsant of choice. Effective control of seizures, with resulting greater social acceptance and increased vocational opportunities, forecasts a fuller life for such patients. DILANTIN has little or no hypnotic effect.

DILANTIN Sodium is supplied in a variety of forms — including Kapseals® of 0.03 Gm. (½ gr.) and 0.1 Gm. (1½ gr.) in bottles of 100 and 1,000.

MILONTIN® Kapseals and Suspension

(phensuximide, Parke-Davis)

For patients with petit mal epilepsy, a drug of choice in initiating treatment — with very few and mild side effects.

MILONTIN Kapseals, 0.5 Gm., bottles of 100 and 1,000; also available as MILONTIN Suspension (250 mg. per 4 cc.) in 16-ounce bottles.

For patients with mixed grand mal–petit mal epilepsy, compatibility permits use of DILANTIN with MILONTIN.

PARKE, DAVIS & COMPANY DETROIT, MICHIGAN

80060

BETTER BREAK

VOL. 6, NO. 6, SEPTEMBER, 1956 • PUBLISHED BY THE CEREAL

Physiologic Response of Boys 12 to 14 Years Old to Different Breakfasts*

Carefully controlled studies to determine the effect of the size and content of breakfast on the physiologic responses of school boys 12 to 14 years of age were recently reported at a prominent medical school.

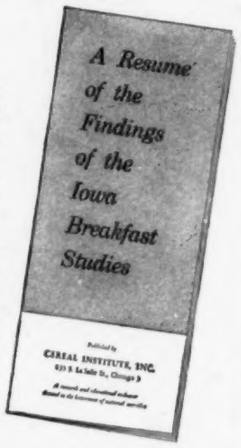
These experiments, conducted jointly by the Departments of Nutrition and Physiology, used the following breakfast regimens:

Basic Cereal and Milk Breakfast
Basic Bacon, Egg, and Milk Breakfast
Mixed Basic Breakfast
Mixed Heavy Breakfast

The first three basic breakfasts provided approximately one-fourth of the daily caloric requirement, while the fourth one provided approximately 40 per cent of the total daily caloric requirement.

New Resumé Booklet
Iowa Breakfast Studies

During the past seven years twenty scientific papers have been published on the Iowa Breakfast Studies, sponsored by the Cereal Institute in the public service, which have provided a sound and true background for organizing and promoting National September Better Breakfast Month, now in its sixth year. A new, 12-page, illustrated Resumé booklet covering these studies has just been completed and is available free of charge in reasonable quantities for your own distribution. Be a Better Breakfast Booster!



FAST BOOSTER

INSTITUTE EACH SEPTEMBER FOR BETTER BREAKFAST BOOSTERS

From these experiments, several practical and sound conclusions can be drawn

On the basis of the data reported, the following conclusions seem justified:

There was no differentiation by way of the physiologic responses studied after the consumption of similar basic breakfasts built around bacon, eggs, and milk, and around cereal and milk. There was no differentiation between the basic and heavy breakfasts in 12 to 14 year old boys. It seems reasonable to suppose that 12 to 14 year old girls would react similarly to the boys of the same age group.

In all other age groups, a basic breakfast providing approximately one-fourth of the total daily caloric and protein requirement is to be recommended rather than a heavy morning meal, as far as physical and mental efficiency in the late morning hours are concerned.

The Basic Cereal and Milk Breakfast—Nutritionally Complete for All Ages

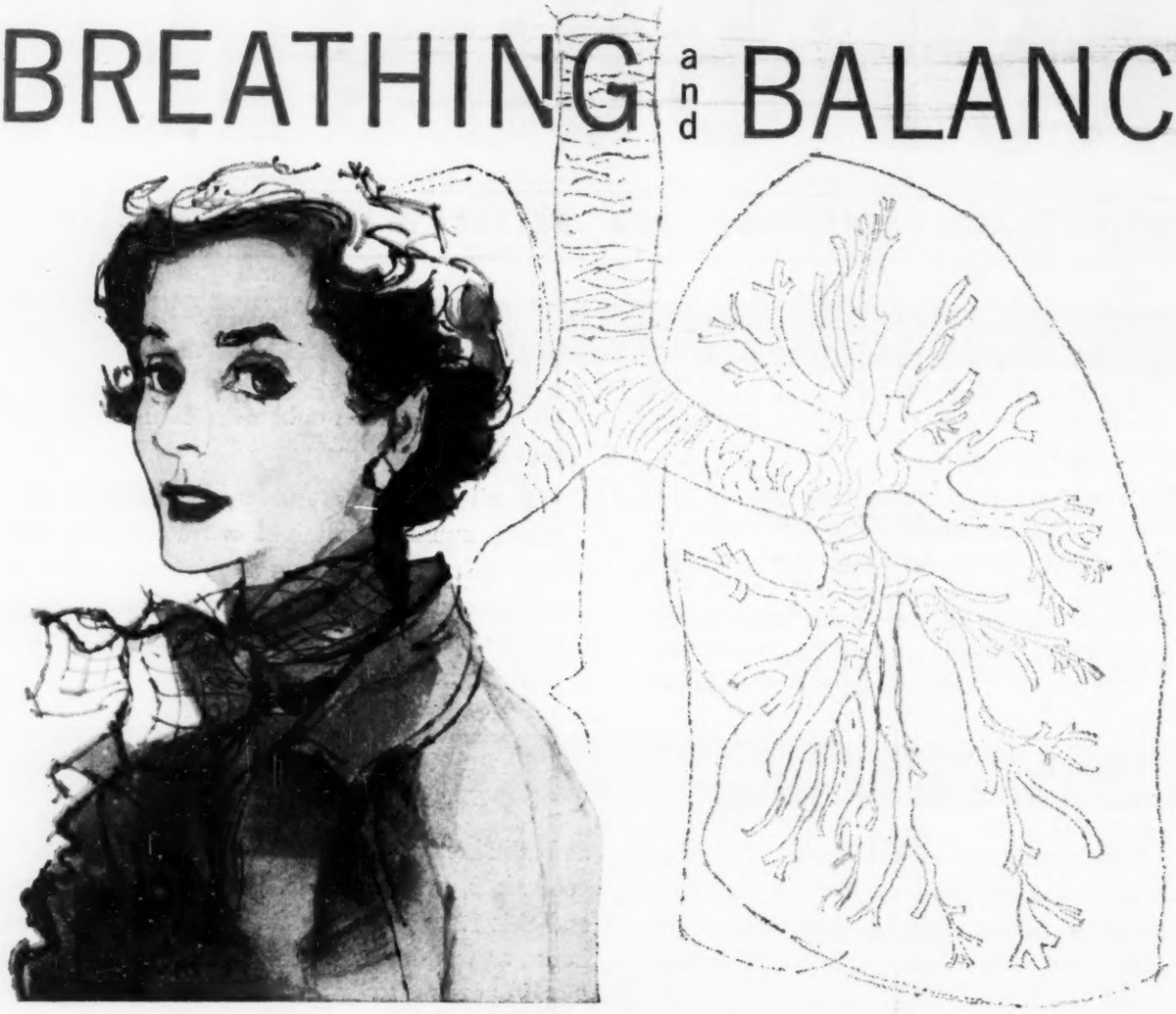
The basic cereal and milk breakfast consisting of fruit, cereal (whole grain, enriched or restored), milk, bread and butter, supplying one-fourth of the daily caloric need, is well balanced in essential nutrients needed by all ages. The basic cereal and milk breakfast is just as effective as a basic bacon, egg, and milk breakfast in promoting the maintenance of good vigor, alertness, and well-being for school boys and girls 12 to 14 years old during the late morning hours, as was demonstrated for college women and men in previous studies. Breakfast is a must for all ages!

*Daum, K., Tuttle, W. W., Larsen, R., Roloff, L., and Salzano, J.: Physiologic Response of Boys 12 to 14 Years Old to Different Breakfasts. J. Am. Dietet. A. 31:4, 1955.

CEREAL INSTITUTE, INC., 135 South LaSalle Street, Chicago 3, Illinois

A research and educational endeavor devoted to the betterment of national nutrition

BREATHING and BALANCE



in bronchial asthma

Sterane®

brand of prednisolone

one of "the best therapeutic agents now available"*

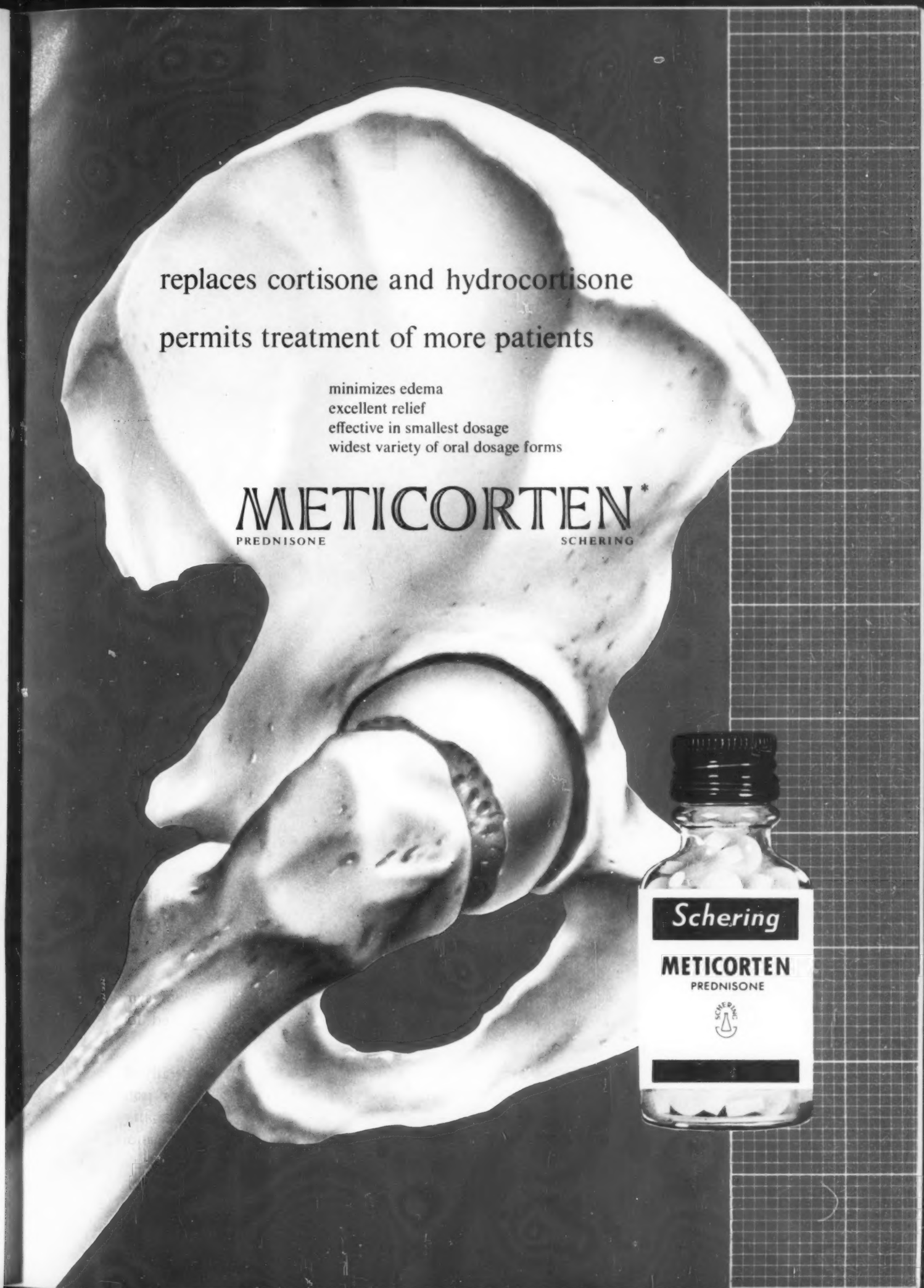
provides restoration of breathing capacity — Relief of symptoms [bronchospasm, cough, wheezing, dyspnea] is maintained for long periods with relatively small doses.*

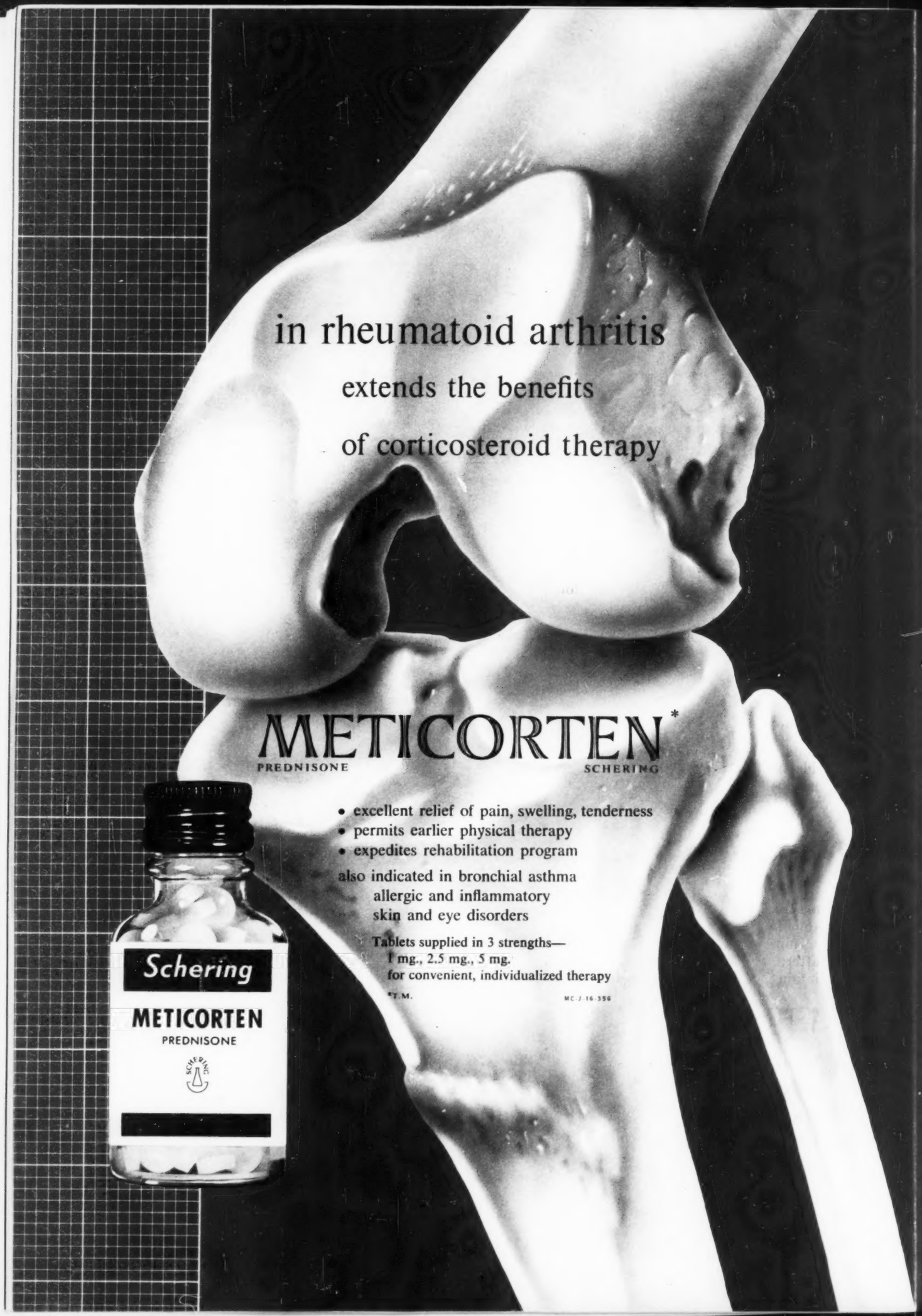
minimal effect on electrolyte balance — "in therapeutically effective doses . . . there is usually no sodium or fluid retention or potassium loss."* Lack of edema and undesirable weight gain permits more effective therapy particularly for those with cardiac complications.

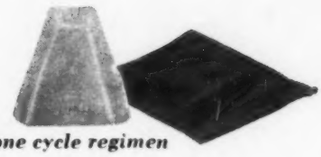
Supplied: White, 5 mg. oral tablets, bottles of 20 and 100. Pink, 1 mg. oral tablets, bottles of 100. Both are deep-scored.

*Schwartz, E.: New York J. Med. 56:570, 1956.

PFIZER LABORATORIES, Brooklyn 6, New York
Division, Chas. Pfizer & Co., Inc.


replaces cortisone and hydrocortisone
permits treatment of more patients
minimizes edema
excellent relief
effective in smallest dosage
widest variety of oral dosage forms
METICORTEN*
PREDNISONE
SCHERING
Schering
METICORTEN
PREDNISONE


in rheumatoid arthritis
extends the benefits
of corticosteroid therapy
METICORTEN*
PREDNISONE
SCHERING
• excellent relief of pain, swelling, tenderness
• permits earlier physical therapy
• expedites rehabilitation program
also indicated in bronchial asthma
allergic and inflammatory
skin and eye disorders
Tablets supplied in 3 strengths—
1 mg., 2.5 mg., 5 mg.
for convenient, individualized therapy
*T.M.
MC-J-16-356
Schering
METICORTEN
PREDNISONE
SCHERING



one cycle regimen

Vaginal trichomoniasis: lasting cure for 93.8%

Within 72 hours, local irritation no longer troubled this patient. Relief resulted from thorough powder insufflation by her doctor and her use of suppositories at home.

- after clinical study of 48 active cases, Schwartz reported 93.8% were symptom-free in 3 days; 97.9% showed no motile trichomonads on smear in 7 days; 93.8% had no recurrence 1 to 3 months after treatment through one menstrual cycle *
- advantages: contains a specific, trichomonacidal nitrofuran. Kills many secondary invaders but permits essential Döderlein's bacillus to exist. Effective in blood, pus and vaginal debris
- office treatment: insufflate TRICOFURON Vaginal Powder twice the first week and once a week thereafter
- home treatment: first week—the patient inserts one TRICOFURON Vaginal Suppository each morning and one each night at bedtime. Thereafter: one a day—a second if needed—to maintain trichomonacidal action

TRICOFURON T. M.

EATON LABORATORIES

Norwich New York

NITROFURANS

a *new* class of antimicrobials

neither antibiotics nor sulfonamides

VAGINAL SUPPOSITORIES AND POWDER

Suppositories contain 0.25% Furoxone® (brand of furazolidone) in a water-miscible base composed of Carbowax and 20 dendro palmitic acid. Hermetically sealed in green foil, box of 12.

Powder contains 0.1% Furoxone in an acidic powder base of lactose, dextrose, citric acid and a silicate. Bottle of 30 Gm.

*Schwartz, J.: Obst. Gyn. N. Y. 7:312, 1956.

speed relief to your hay fever patients

Pyribenzamine®

brings help at the moment of allergic need

Because it acts so rapidly, Pyribenzamine in many cases actually *aborts* the allergic episode—suppressing symptoms before they become full-blown. On the other hand, Pyribenzamine is promptly metabolized, so that there is a minimum of "drug overlap" in asymptomatic periods. For prompt relief of symptoms—when your patients most need it—prescribe fast-acting Pyribenzamine... for hay fever, allergic dermatoses, drug reactions or whenever an antihistamine is required.

50-mg. tablets (scored); 25-mg. tablets (coated)

CIBA
SUMMIT, N. J.

PYRIBENZAMINE® hydrochloride
(tripelennamine hydrochloride CIBA)
s/22864

« Washington News »

House Committee Studies Medical Education Aid • •
Republican Plank Urges Medical Education Grants • •
Council Meeting on Laboratory Facilities Grants • •
AEC Reviews Progress in Atomic Medical Research • •

FEDERAL AID TO MEDICAL EDUCATION

A House committee is laying the groundwork for action in the next Congress on federal aid to medical education. With both the administration and the House Interstate and Foreign Commerce Committee showing interest in the subject, it should hold a high place on the health agenda of the session beginning in January. The committee staff, acting at the direction of the full committee, has written more than 50 organizations asking them for factual data bearing on medical education. The committee wants facts on the financial needs of medical schools and on the supply and demand for medical applicants and graduates "rather than arguments intended to support or oppose any particular form of federal aid." The committee staff letter adds that "this information should be available in useable form at the beginning of the 85th Congress to form the basis of the committee's further consideration of legislation to authorize federal aid to medical education."

President Eisenhower, in signing a recent measure for construction grants for nongovernmental research laboratories, said the measure was deficient because it did not include teaching grants. In medical and dental schools, he noted, space for research and teaching functions is so closely interrelated that no clear line can be drawn between them. The President then expressed hope that the next Congress would broaden the law to include grants for training facilities "which are essential in this period of rapid expansion of medical research." Secretary Folsom of the Department of Health, Education, and Welfare subsequently expressed disappointment also and promised the administration will continue to press for medical education legislation.

Under the heading of supply of students, the House committee is asking for information on (1) national training capacity of medical, dental, osteopathic, and public health schools, (2) training capacity by region and state, (3) utilization of foreign medical schools, (4) trends in supply of applicants, (5) admission policies, and (6) duration and cost to student of medical education. On the supply and demand of graduates, the committee cites (1) present and prospective numbers of medical school graduates, (2) licensure of graduates of foreign medical schools, (3) net increment in relation to population, and (4) examples of unmet needs in public programs, institutions, professional specialities, and rural areas. Concerning medical schools themselves, the committee asks these questions: (1) present costs and financing of operations of individual institutions, (2) effects of medical school financing on university financing, (3) expansion plans of individual institutions, and (4) state, regional, and private national programs and plans for helping medical schools and students.

MEDICAL SECTIONS OF REPUBLICAN PLATFORM

Health and medical sections of the Republican party's platform call for federal assistance to medical schools for construction and equipment, legislation for reinsurance and pooling arrangements to speed the expansion of voluntary health insurance, and vigorous development of atomic energy for medical purposes. The platform notes that the Eisenhower administration this year urged passage of the aid to medical schools bill but that Congress failed to enact it. Health and medical sections of the platform read as follows:

"The Republican party believes that the physical, mental, and spiritual well-being of the people is as important as their economic health. It will continue to support this conviction with vigorous action. . . . Republican action created the Department of Health, Education and Welfare as the first new Federal department in forty years, to raise the continuing consideration of these problems for the first time to the highest council of Government, the President's Cabinet. . . .

"We have fully resolved to continue our steady gains in man's unending struggle against disease and disability. . . . We have supported the distribution of free vaccine to protect millions of children against dreaded polio. . . . Republican leadership has enlarged Federal assistance for construction of hospitals, emphasizing low-cost care of chronic diseases and the special problems of older persons, and increased Federal aid for medical care of the needy. . . .

"We have asked the largest increase in research funds ever sought in one year to intensify attacks on cancer, mental illness, heart disease and other dread diseases. . . . We demand once again, despite the reluctance of the Democrat Eighty-fourth Congress, Federal assistance to help build facilities to train more physicians and Scientists. . . . We have encouraged a notable expansion and improvement of voluntary health insurance, and urge that reinsurance and pooling arrangements be authorized to speed this progress. . . .

"We have strengthened the Food and Drug Administration, and we have increased the vocational rehabilitation program to enable a larger number of the disabled to return to satisfying activity. . . . We shall continue to seek extension and perfection of a sound Social Security system. We pledge close cooperation with state, local and private agencies to reduce the ghastly toll of fatalities on the nation's highways."

From the Washington Office of the American Medical Association.

The platform pledges the party to "continuous vigorous development of atomic energy. . . . For the defense of our own country and to deter aggression, and for the promotion of world peace and the enhancement of our knowledge of basic science and its application to industry, agriculture and the healing arts. . . . President Eisenhower has inaugurated and led a strong program for developing the peaceful atom—a program which has captured the imagination of men and women everywhere with its widespread, positive achievements. . . .

"Every day, radioactive isotopes are brought more and more into use on farms, in clinics and hospitals, and industry. The use of isotopes already has resulted in annual savings of hundreds of millions of dollars and the nuclear age has only begun. It is to the benefit of the United States, as well as to all nations everywhere, that the uses of atomic energy be explored and shared."

MEETING OF COUNCIL ON RESEARCH FACILITIES

Sept. 20 has been set tentatively as the date for the first meeting of the National Advisory Council on Health Research Facilities, which must pass on money to be awarded under a new research grants program authorized by the last Congress. The council also will set policies and approve regulations. Members of the council now are being selected by Secretary Folsom of the Department of Health, Education, and Welfare.

The program provides for grants totaling 30 million dollars a year for three years to help in financing the construction of facilities for research in the "sciences related to health," which are defined in the act as including medicine, osteopathy, dentistry, and public health. Only public or nonprofit institutions are eligible, and the federal share of the project may not exceed 50%. Funds may be used for increasing research facilities through constructing and equipping new buildings or expanding, remodeling, or altering and equipping existing structures. The money may not be used for buying land, for offsite improvements, or to satisfy obligations incurred prior to award of the grant. Administration of the program is being handled by the Division of Research Grants, National Institutes of Health, Bethesda 14, Md.

PROGRESS IN ATOMIC RESEARCH

During the last six months new methods were developed for using atomic energy products and techniques to treat cancers, the effects of radiation upon living creatures were further investigated, and studies of methods of waste disposal yielded promising new knowledge, the Atomic Energy Commission's 20th semiannual report states. Research is being carried on in national laboratories and at projects sponsored by the commission in universities, colleges, hospitals, and other research institutions.

The report also describes a project for construction of a research hospital, to include a medical nuclear reactor, at Brookhaven National Laboratory on Long Island. The Brookhaven medical reactor, the first designed exclusively for medical research and treatment, will incorporate unique features to insure wider medical application of neutrons, flexibility of treatment, and availability of special short-lived radioisotopes. Completion is scheduled for 1958.

Announcement of another grant to make possible the completion of a nuclear research reactor to be used for medical research comes from the National Science Foundation. The foundation has awarded a grant of $500,000 to the Massachusetts Institute of Technology to help pay for a nuclear research reactor facility. Medical research planned for the MIT reactor includes the development of improved methods for treating brain tumors and other cancers by a neutron-beam therapy. The planned facilities will provide a higher neutron-beam strength than is presently available in other reactors and will furnish a down-directed beam that is preferred for the treatment of brain tumors.

The AEC helped assure safety and health protection at the 1956 spring weapons tests in the Pacific. A program to measure the radioactivity of sea water and marine organisms in the test area is being conducted. The marine surveys will continue as far as radioactivity is detectable in the ocean.

The AEC reported that it has continued its work with the Federal Civil Defense Administration, has kept its informative material in this field up to date, and is helping to provide local civilian defense groups with training tools. The commission also is expanding its scientific and technical assistance by adding consultant services to assist in civil defense matters. The report notes that "The Effects of Atomic Weapons," published jointly by the commission and the Department of Defense in 1950, is being revised to include the latest knowledge of weapons effects gathered by experiment and observation in laboratory work and test series since preparation of the first issue. Publication is planned for early 1957 under the title "Effects of Nuclear Weapons."

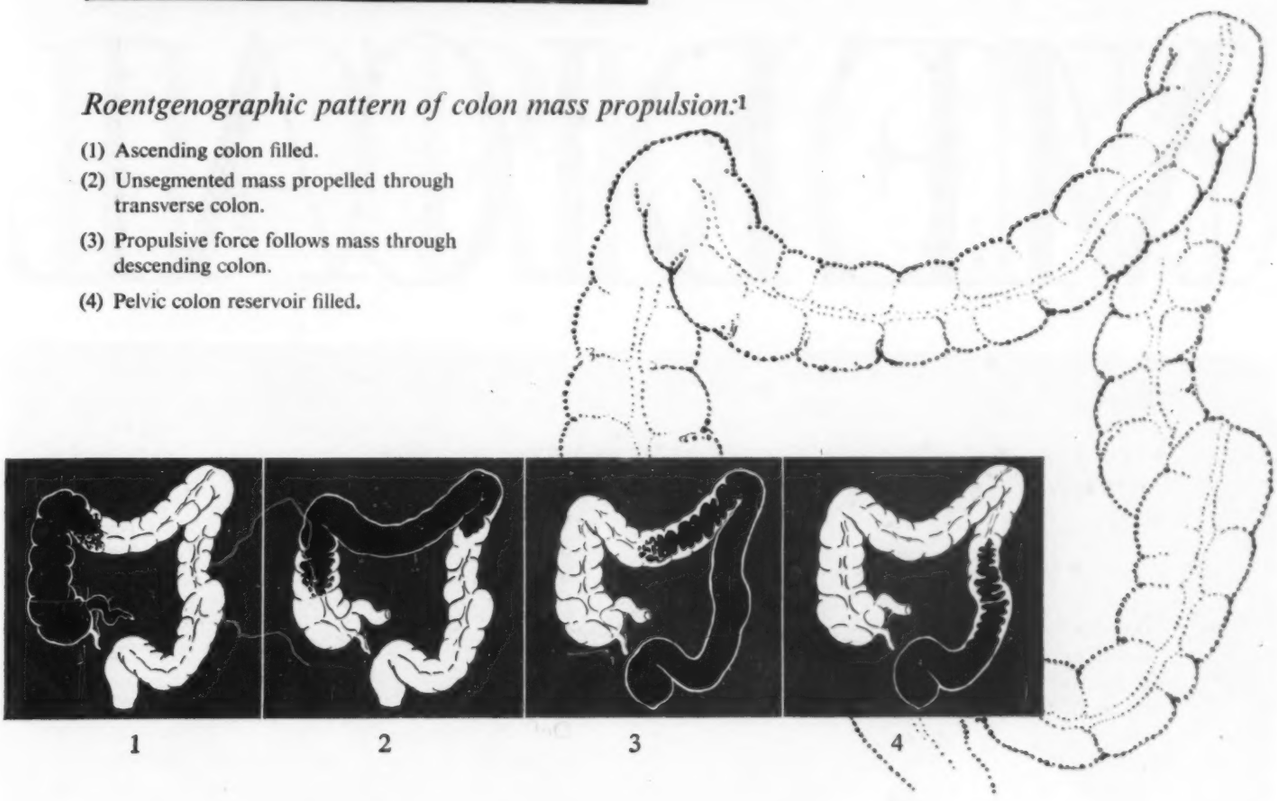
MISCELLANY

Dr. Theodore J. Bauer, a career officer in the Public Health Service since 1934, has been named deputy chief of the Bureau of State Services. He replaces Dr. Leroy E. Burney, recently appointed surgeon general of PHS. . . . The Korean GI Bill in its four years of operation has given 1,500,000 Korea veterans an opportunity to train for virtually every type of career and occupation found in America. Another one million veterans are expected to make use of their Korean GI training benefits before the program expires in 1965, according to VA estimates. One-third of all Korean GI trainees aimed for high-level professional, semi-professional, and technological occupations. Of the 156,000 Korea veterans who studied the sciences, 37,000 chose medicine and related subjects. . . . The Walter Reed Army Medical Center has named Lieut. Col. Herman A. Jones Jr., of Silver Spring, Md., as its new inspector general. Colonel Jones previously served in the office of the surgeon general. . . . The National Science Foundation has announced 289 grants, totaling $3,504,277, awarded during the last quarter of fiscal 1956 to help finance basic research in the sciences and the training of science teachers. The grants will also be used to help pay for conferences in support of science, for exchange of scientific information, and for attendance of scientists at scientific meetings abroad.

SMOOTHAGE ACTION IN CONSTIPATION

Roentgenographic pattern of colon mass propulsion:[1]

(1) Ascending colon filled.
(2) Unsegmented mass propelled through transverse colon.
(3) Propulsive force follows mass through descending colon.
(4) Pelvic colon reservoir filled.



Reestablishing Bowel Reflexes with Metamucil®

Nervous fatigue, tension, injudicious diet, failure to establish regularity, too little exercise, excessive use of cathartics—all factors which contribute to constipation.[2]

Sufficient bulk and sufficient fluid form the basic rationale of treatment of constipation. Metamucil (the mucilloid of Plantago ovata) produces a bland, smooth bulk when mixed with the intestinal contents. This bulk, through its mass alone, stimulates the peristaltic reflex and thus initiates the desire to evacuate, even in patients in whom postoperative hesitancy exists.

Correction of constipation logically, therefore, lies in the suitable adjustment of such factors as nervous fatigue and tension, improper intake of fluid, improper dietary habits, failure to respond to the call to stool, lack of physical exercise and abuse of the intestinal tract through excessive use of laxatives.[2]

The characteristics of Metamucil permit the correction of most of these factors: it provides bulk; it demands adequate intake of fluids (one glass with Metamucil powder, one glass after each dose); it increases the physiologic demand to evacuate; and it does not establish a laxative "habit." Metamucil, in addition, is inert, and also nonirritating and nonallergenic.

The average adult dose is one rounded teaspoonful of Metamucil powder in a glass of cool water, milk or fruit juice, followed by an additional glass of fluid if indicated.

Metamucil is the highly refined mucilloid of Plantago ovata (50%), a seed of the psyllium group, combined with dextrose (50%) as a dispersing agent. It is supplied in containers of one pound—also four ounces and eight ounces. G. D. Searle & Co., Research in the Service of Medicine.

---

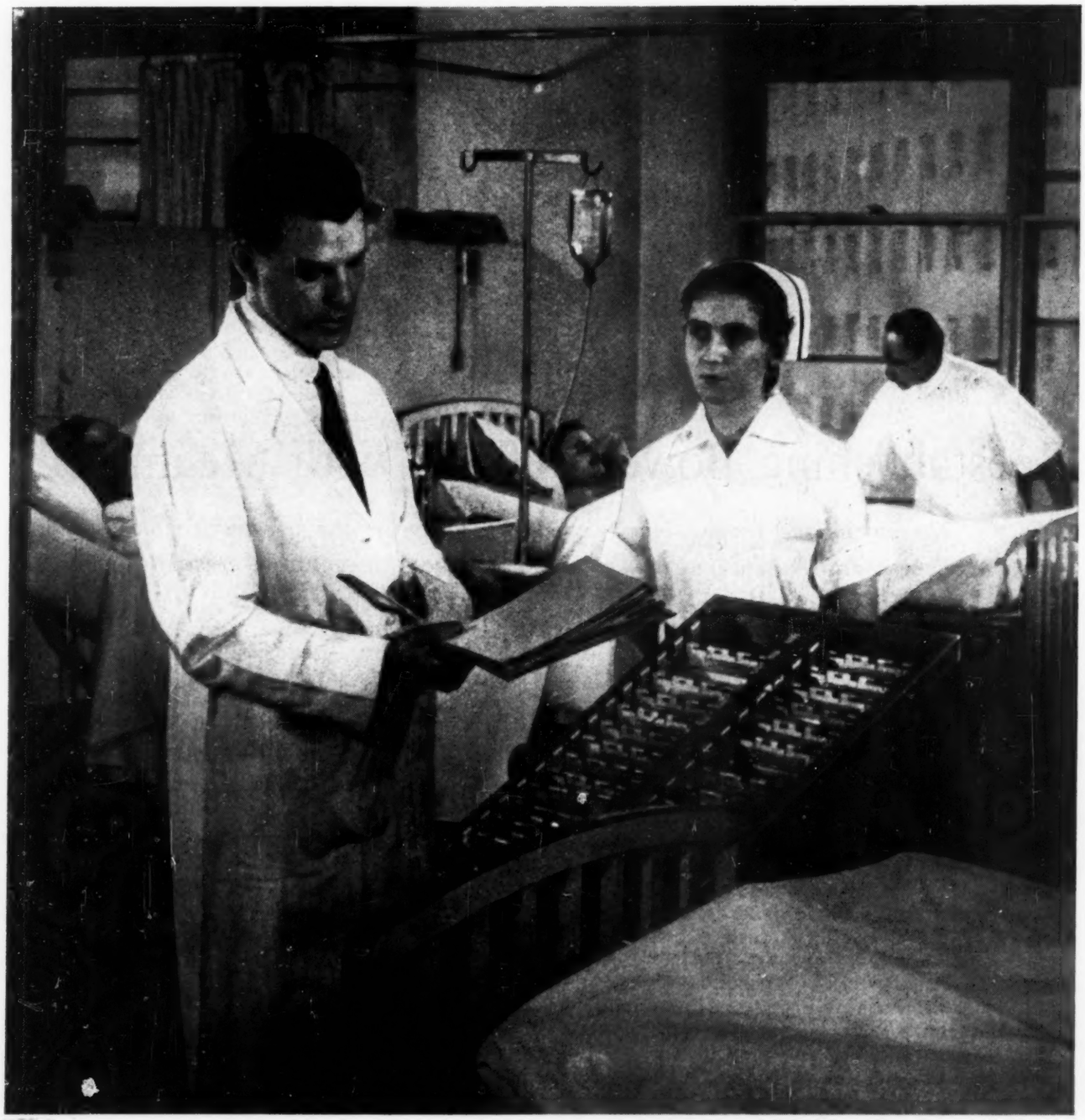
1. Best, C. H., and Taylor, N.B.: The Physiological Basis of Medical Practice: A Text in Applied Physiology, ed. 5, Baltimore, The Williams & Wilkins Company, 1950, pp. 579-583.

2. Bargen, J. A.: A Method of Improving Function of the Bowel, Gastroenterology *13*:275 (Oct.) 1949.

SEARLE

Returning September 9th,

MEDICAL



MEDICAL HORIZONS will appear every Sunday afternoon at 4:30 (EDT) on ABC Television

on the ABC Television Network

HORIZONS

—presented by C I B A in co-operation with the American Medical Association

MEDICAL HORIZONS is a live documentary program dedicated to the men and women of medicine.

Each Sunday, on ABC Television, MEDICAL HORIZONS will present a report on the progress made in a specific field of medicine—direct from a hospital, clinic or university especially active in that field.

Through these reports, Ciba hopes to broaden the viewer's knowledge, and add to his appreciation of the work done by physicians everywhere.

Here, for your information, are some of the topics for 1956:

Premature Infant Care
Menopause
Anesthesiology
Prevention of Blindness
Submarine Medicine
Mental Health

C I B A ... in the tradition of research

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1956 Clinical Meeting, Seattle, Nov. 27-30.

1957 Annual Meeting, New York, June 3-7.

1957 Clinical Meeting, Philadelphia, Dec. 3-6.

1958 Annual Meeting, San Francisco, June 23-27.

1958 Clinical Meeting, Minneapolis, Dec. 2-5.

1959 Annual Meeting, Atlantic City, June 8-12.

ACADEMY OF PSYCHOSOMATIC MEDICINE, Hotel Plaza, New York, Oct. 4-6. Dr. Ethan Allan Brown, 75 Bay State Road, Boston 15, Secretary.

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY, Palmer House, Chicago, Oct. 14-19. Dr. W. L. Benedict, 100 First Avenue Bldg., Rochester, Minn., Secretary.

AMERICAN ACADEMY OF PEDIATRICS, Hotel Statler, New York, Oct. 6-11. Dr. E. H. Christopherson, 1801 Hinman Ave., Evanston, Ill., Executive Secretary.

AMERICAN ASSOCIATION OF BLOOD BANKS, Somerset Hotel, Boston, Sept. 3-5. Miss Marjorie Saunders, 3707 Gaston Ave., Dallas 10, Tex., Secretary.

AMERICAN ASSOCIATION OF MEDICAL CLINICS, Washington, D. C., Oct. 26-28. Dr. Edwin P. Jordan, Box 58, Charlottesville, Va., Executive Director.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS, The Homestead, Hot Springs, Va., Sept. 6-8. Dr. Frank R. Lock, Bowman Gray School of Medicine, Winston-Salem, N. C., Secretary.

AMERICAN ASSOCIATION FOR THE SURGERY OF TRAUMA, The Biltmore, Santa Barbara, Calif., Oct. 4-6. Dr. James K. Stack, 700 N. Michigan Ave., Chicago 11, Secretary.

AMERICAN BRANCH, INTERNATIONAL SOCIETY OF SURGERY, Fairmont Hotel, San Francisco, Oct. 9. Dr. Walter G. Maddock, 250 East Superior St., Chicago 11, Secretary.

AMERICAN COLLEGE OF CLINIC ADMINISTRATORS, Eden Roc Hotel, Miami Beach, Fla., Sept. 16-19. Miss Eva M. Rule, 106 North Silver St., Olney, Ill., Secretary.

AMERICAN COLLEGE OF GASTROENTEROLOGY, Hotel Roosevelt, New York, Oct. 14. Mr. Daniel Weiss, 33 West 60th St., New York 23, Executive Secretary.

AMERICAN COLLEGE OF SURGEONS, Fairmont Hotel, San Francisco, Oct. 8-12. Dr. Michael L. Mason, 40 East Erie St., Chicago, Secretary.

AMERICAN CONGRESS OF PHYSICAL MEDICINE AND REHABILITATION, Atlantic City, N. J., Sept. 10-14. Dr. Walter J. Zeiter, 30 N. Michigan Ave., Chicago 2, Executive Director.

AMERICAN DENTAL ASSOCIATION, Atlantic City, Oct. 1-4. Dr. Harold Hillenbrand, 222 East Superior St., Chicago 11, General Secretary.

AMERICAN HEART ASSOCIATION, Netherlands Plaza Hotel, Cincinnati, Oct. 27-31. Dr. Rome A. Betts, 44 East 23d St., New York 10, Executive Director.

AMERICAN HOSPITAL ASSOCIATION, Palmer House, Chicago, Sept. 17-20. Dr. Edwin L. Crosby, 18 E. Division St., Chicago 10, Director.

AMERICAN MEDICAL WRITERS' ASSOCIATION, Hotel Morrison, Chicago, Sept. 28-29. Dr. Harold Swanberg, P. O. Drawer 110, Quincy, Ill., Secretary.

AMERICAN RHINOLOGIC SOCIETY, Illinois Masonic Hospital and Palmer House, Oct. 9-13. Mrs. Mabel Campbell, 834 Wellington Ave., Chicago 14, Corresponding Secretary.

AMERICAN ROENTGEN RAY SOCIETY, Hotel Statler, Los Angeles, Sept. 25-28. Dr. Barton R. Young, Germantown Hospital, Philalelphia 44, Secretary.

AMERICAN SOCIETY OF ANESTHESIOLOGISTS, Municipal Auditorium, Kansas City, Mo., Oct. 8-12. Mr. John H. Hunt, 188 West Randolph St., Chicago 1, Executive Secretary.

AMERICAN SOCIETY OF CLINICAL PATHOLOGISTS, Drake Hotel, Chicago, Oct. 7-12. Dr. Clyde G. Culbertson, 1040-1232 West Michigan St., Indianapolis, Secretary.

AMERICAN SOCIETY FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS, Kentucky Hotel, Louisville, Ky., Oct. 22-25. Dr. Harold Hodge, University of Rochester, Rochester 20, N. Y., Secretary.

AMERICAN VETERINARY MEDICAL ASSOCIATION, Plaza Hotel, San Antonio, Texas, Oct. 15-18. Dr. J. G. Hardenbergh, 600 South Michigan Blvd., Chicago 5, Executive Secretary.

ASSOCIATION OF LIFE INSURANCE MEDICAL DIRECTORS OF AMERICA, Hotel Roosevelt, New Orleans, Oct. 23-25. Dr. Henry B. Kirkland, P.O. Box 594, Newark 1, N. J., Secretary.

ASSOCIATION OF MEDICAL ILLUSTRATORS, Iowa City, Oct. 5-7. Miss Rose M. Reynolds, University of Nebraska College of Medicine, Omaha 5, Corresponding Secretary.

CENTRAL ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS, Roosevelt Hotel, New Orleans, Oct. 4-6. Dr. Edwin J. DeCosta, Suite 615, 104 South Michigan Ave., Chicago 3, Secretary.

CLINICAL ORTHOPAEDIC SOCIETY, Cleveland, Oct. 5-6. Dr. Marcus J. Stewart, 869 Madison Ave., Memphis, Tenn., Executive Secretary.

COLLEGE OF AMERICAN PATHOLOGISTS, Drake Hotel, Chicago, Oct. 6-13. Dr. A. H. Dearing, Suite 2115, Prudential Plaza, 130 East Randolph St., Chicago, Executive Secretary.

COLORADO STATE MEDICAL SOCIETY, Stanley Hotel, Estes Park, Sept. 5-8. Mr. Harvey T. Sethman, 835 Republic Bldg., Denver 2, Executive Secretary.

DELAWARE, MEDICAL SOCIETY OF, Henlopen Hotel, Rehoboth Beach, Sept. 13-14. Dr. Norman L. Cannon, 621 Delaware Ave., Wilmington, Secretary.

EASTERN PSYCHIATRIC RESEARCH ASSOCIATION, Waldorf-Astoria Hotel, New York, Oct. 27. Dr. Theodore R. Robie, 676 Park Ave., East Orange, N. J., Secretary.

GULF COAST CLINICAL SOCIETY, Admiral Semmes Hotel, Mobile, Ala., Oct. 18-19. Dr. Theodore F. Middleton, 1302 Government St., Mobile, Ala., Secretary.

INDIANA STATE MEDICAL ASSOCIATION, Murat Temple, Indianapolis, Oct. 16-18. Mr. James A. Waggener, 23 East Ohio St., Indianapolis 4, Executive Secretary.

INSTITUTE OF PSYCHIATRIC TREATMENT, Boston State Hospital, Boston, Sept. 27-29. Dr. Leo Alexander and Dr. Robert Arnot, 433 Marlborough St., Boston 15, Co-Chairmen.

INTERSTATE POSTGRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA, Hotel Statler, Cleveland, Oct. 22-26. Mr. Roy T. Ragatz, Box 1109, Madison 1, Wis., Executive Director.

KANSAS CITY SOUTHWEST CLINICAL SOCIETY, Fall Clinical Conference, Municipal Auditorium, Kansas City, Mo., Sept. 24-27. Dr. Lee H. Leger, 3036 Gillham Road, Kansas City 8, Mo., Director of Clinics.

KENTUCKY STATE MEDICAL ASSOCIATION, Brown Hotel and Columbia Auditorium, Louisville, Sept. 18-20. Mr. J. P. Sanford, 620 S. Third St., Louisville 2, Executive Secretary.

MICHIGAN STATE MEDICAL SOCIETY, Sheraton-Cadillac Hotel, Detroit, Sept. 26-28. Dr. L. Fernald Foster, 606 Townsend St., Lansing 5, Secretary.

MID-CONTINENT PSYCHIATRIC ASSOCIATION, Velda Rose Motel, Hot Springs, Ark., Sept. 21-23. Dr. William F. Roth Jr., University of Kansas Medical Center, Kansas City 12, Kans., Secretary.

MISSISSIPPI VALLEY MEDICAL SOCIETY, Hotel Morrison, Chicago, Sept. 26-28. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

MONTANA MEDICAL ASSOCIATION, Rainbow Hotel, Great Falls, Sept. 13-15. Mr. L. R. Hegland, P. O. Box 1692, Billings, Executive Secretary.

NATIONAL PROCTOLOGIC ASSOCIATION, Maryland Hotel, Chicago, Oct. 18-20. Dr. George E. Mueller, 59 East Madison St., Chicago 2, Executive Secretary.

NEW HAMPSHIRE MEDICAL SOCIETY, Wentworth-by-the-Sea, Newcastle, Sept. 28-30. Dr. Warren H. Butterfield, 18 School St., Concord, Secretary.

OREGON STATE MEDICAL SOCIETY, Portland, Oct. 16-20. Dr. Richard R. Carter, 1020 S. W. Taylor St., Portland 5, Secretary.

PENNSYLVANIA, MEDICAL SOCIETY OF THE STATE OF, Chalfonte-Haddon Hall, Atlantic City, N. J., Oct. 21-26. Dr. Harold B. Gardner, 230 State St., Harrisburg, Secretary.

REGIONAL MEETINGS:

AMERICAN COLLEGE OF PHYSICIANS:

New England, Burlington, Vt., Sept. 7-8. Dr. Elbridge E. Johnston, 122 Railroad St., St. Johnsbury, Vt., Governor.

New Mexico, Albuquerque, Oct. 16. Dr. Robert Friedenberg, 143 Madison St. N.E., Albuquerque, Governor.

Midwest, Minneapolis, Oct. 27. Dr. Wesley W. Spink, 412 Delaware St., S.E., Minneapolis 14, Governor.

Minot, N. D., September 8. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.

Western New York, Albany, Oct. 19. Dr. John H. Talbott, 100 High St., Buffalo 3, Governor.

West Virginia, Charleston, Sept. 29. Dr. Paul H. Revercomb, 1031 Quarrier St., Charleston 1, W. Va., Governor.

SOUTHEASTERN ALLERGY ASSOCIATION, Charlotte, N. C., Oct. 5-6. Dr. Katharine B. MacInnis, 1515 Bull St., Columbia 1, S. C., Secretary.

TENNESSEE VALLEY MEDICAL ASSEMBLY, Read House, Chattanooga, Oct. 1-2. Dr. Harry E. Jones, 109 Medical Arts Bldg., Chattanooga 2, Secretary.

U. S. SECTION, INTERNATIONAL COLLEGE OF SURGEONS, Palmer House, Chicago, Sept. 9-13. Dr. Ross T. McIntire, 1516 Lake Shore Drive, Chicago 10, Executive Director.

UTAH STATE MEDICAL ASSOCIATION, Hotel Utah, Salt Lake City, Sept. 6-8. Mr. Harold Bowman, 42 South Fifth East St., Salt Lake City 2, Executive Secretary.

VERMONT STATE MEDICAL SOCIETY, Wentworth-by-the-Sea, Newcastle, N. H., Sept. 27-29. Dr. Robert L. Richards, 128 Merchants Row, Rutland, Secretary.

VIRGINIA, MEDICAL SOCIETY OF, Hotel Roanoke, Roanoke, Oct. 14-17. Mr. Robert I. Howard, 105 West Franklin St., Richmond 20, Executive Secretary.

WASHINGTON STATE MEDICAL ASSOCIATION, Olympic Hotel, Seattle, Sept. 16-19. Mr. Ralph W. Neill, 1309 Seventh Ave., Seattle 1, Executive Secretary.

FOREIGN AND INTERNATIONAL

ASSOCIATION OF INDUSTRIAL MEDICAL OFFICERS, London School of Hygiene and Tropical Medicine, London, W.C.1, England, Sept. 24-28, 1956. Dr. J. A. A. Mekelburg, Peek, Frean and Company, Ltd., Keetons Rd., Bermondsey, London, S.E. 16, England, Honorable Secretary.

AUSTRIAN CONGRESS OF INDUSTRIAL MEDICINE, Vienna, Austria, Oct. 1-4, 1956. Dr. Ch. Frieberger, Austrian Society for Industrial Medicine, Kinderspitalgasse 15, Vienna, Austria, Organizing Secretary.

BAHAMAS MEDICAL CONFERENCE, Princess Margaret Hospital, Nassau, Bahamas, Dec. 1-15, 1956. For information address: Dr. B. L. Frank, 4th Floor, 550 Fifth Ave., New York 36, N. Y., U. S. A.

CANADIAN PHYSIOLOGICAL SOCIETY, University of Montreal, Montreal, P. Q., Canada, Oct. 18-20, 1956. Dr. J. M. R. Beveridge, Dept. of Biochemistry, Queen's University, Kingston, Ont., Canada, Secretary.

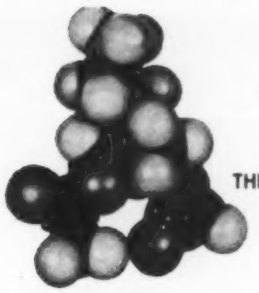
CHILEAN CONGRESS OF INTERNAL MEDICINE, Santiago, Chile, S. A., Oct. 1-6, 1956. Prof. Francisco Rojas Villegas, Avda. Bernardo O'Higgins 160, Hospital San Fco. de Borja, Santiago, Chile, S. A., Secretario General del Congreso.

CONGRESS OF INTERNATIONAL ASSOCIATION OF LOGOPEDICS AND PHONIATRICS, Barcelona, Spain, Sept. 3-7, 1956. Dr. J. Perello, Provenza 319, Barcelona 9, Spain, Secretary-General.

EUROPEAN CONGRESS OF ALLERGOLOGY, Florence, Italy, Sept. 12-15, 1956. Prof. Umberto Serafini, Instituto de Patologia Medica, Viale Morgagni, Florence, Italy, Secretary-General.

EUROPEAN CONGRESS OF CARDIOLOGY, Stockholm, Sweden, Sept. 10-14, 1956. Dr. Karl Erik Grewin, Sodersjukhuset, Stockholm, Sweden, General Secretary.

(Continued on page 28)



THE MILTOWN MOLECULE

A tranquilizer well suited for prolonged therapy

NO ORGANIC CONTRAINDICATIONS

reported to date

- well tolerated, non-addictive, essentially non-toxic
- no blood dyscrasias, liver toxicity, Parkinson-like syndrome or nasal stuffiness
- chemically unrelated to chlorpromazine or reserpine
- does not produce significant depression
- orally effective within 30 minutes for a period of 6 hours

Indications: anxiety and tension states, muscle spasm.

Miltown®

THE ORIGINAL MEPROBAMATE

DISCOVERED AND INTRODUCED by Wallace Laboratories, New Brunswick, N. J.

2-methyl-2-*n*-propyl-1,3-propanediol dicarbamate—U. S. Patent 2,724,720

SUPPLIED: 400 mg. scored tablets. Usual dose: 1 or 2 tablets t.i.d.

Literature and Samples Available on Request

German Gynaecological Society, Heidelberg, Germany, Sept. 18-22, 1956. For information address: Prof. Dr. Hans Runge, Universitats-Frauenklinik, Heidelberg, Germany.

Ibero Latin American Congress of Dermatology, Mexico, D. F., Mexico, Oct. 21-27, 1956. Dr. Manuel Malacara, Centro Dermatologico Pascua, Calle Dr. Garciadiego 21, Mexico 7, D. F., Mexico, Secretario.

Inter-American Conference on Occupational Medicine and Toxicology, Miami, Fla., U. S. A., Sept. 3-7, 1956. Dr. Homer F. Marsh, Dean, School of Medicine, University of Miami, Coral Gables 46, Fla., U. S. A., General Chairman.

Inter-American Congress of Cardiology, Havana, Cuba, Nov. 11-17, 1956. For information address: Dr. Ramon Aixala, Apartado 2108, Havana, Cuba.

International Cancer Cytology Congress, Drake Hotel, Chicago, Illinois, U. S. A., Oct. 8-13, 1956. For information address: Dr. A. H. Dearing, College of American Pathologists, Prudential Plaza, Suite 2115, Chicago 1, Illinois, U. S. A.

International Congress Against Alcoholism, Istanbul, Turkey, Sept. 10-15, 1956. For information address: International contre l'Alcoolisme, Case Gare 49, Lausanne, Switzerland.

International Congress of Anthropological and Ethnological Sciences, Philadelphia, Pa., U. S. A., Sept. 1-9, 1956. Dr. William N. Fenton, National Research Council, Division of Anthropology and Psychology, 2101 Constitution Avenue, Washington 25, D. C., U. S. A., Secretary-General.

International Congress of Clinical Chemistry, Barbizon-Plaza Hotel, New York, N. Y., U. S. A., Sept. 9-14, 1956. Dr. Albert E. Sobel, Jewish Hospital, 555 Prospect Place, Brooklyn 38, N. Y., U. S. A., Chairman.

International Congress of Dietetics, Congress Palace, Esposizione Universale Roma, Rome, Italy, Sept. 10-14, 1956. Prof. E. Serianni, Associazione Dietetica Italiana, via dei Penitenzieri N 13, Rome, Italy, Secretary General.

International Congress on Diseases of the Chest, Cologne, Germany, Aug. 19-23, 1956. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Illinois, U. S. A., Executive Director.

International Congress on the History of Medicine, Madrid and Salamanca, Spain, Sept. 21-28, 1956. For information address: Prof. Dr. Luis S. Graniel, Instituto Arnaldo de Vilanova de Historia de la Medicina, Duque de Medinaceli 4, Madrid, Spain.

International Congress for the History of Science, Florence and Milan, Italy, Sept. 3-10, 1956. Dr. M. L. Bonelli, Instituto di Ottica, Arcetri, Florence, Italy, Secretary-General.

International Congress of Hydatid Disease, Athens, Greece, Sept. 14-18, 1956. Prof. B. Kourias, Croix Rouge Hellenique, 1 rue Mackenzie King, Athens, Greece, Secretary-General.

International Congress of Internal Medicine, Madrid, Spain, Sept. 19-23, 1956. Dr. J. C. De Oya and Dr. J. Gimena, Hostaleza No. 90, Madrid, Spain, Secretaries.

International Congress of International College of Surgeons, Palmer House, Chicago, Illinois, U. S. A., Sept. 9-13, 1956. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

International Congress on Medical Records, Shoreham Hotel, Washington, D. C., U. S. A., Oct. 1-5, 1956. For information address: Miss Doris Gleason, Executive Director, American Association of Medical Record Librarians, 510 North Dearborn St., Chicago 10, Illinois, U. S. A.

International Genetics Symposium, Tokyo and Kyoto, Japan, Sept. 6-12, 1956. For information address: Secretary, International Genetics Symposium, Science Council of Japan, Ueno Park, Tokyo, Japan.

International Professional Union of Gynecologists and Obstetricians, Madrid, Spain, Sept. 28-29, 1956. Dr. Jacques Courtois, 1 rue Racine, St-Germain-en-Laye (S and O), France, Permanent International Secretary-General.

MAGAZINE—TELEVISION REPORT

The following list of current medical articles in mass-circulation magazines and forthcoming network television programs on medical subjects is published each week only for the information of readers of The Journal. *Unless specifically stated, the American Medical Association neither approves nor disapproves of the articles and programs reported.*

TELEVISION

Sunday, Sept. 9

ABC-TV, 4:30 p.m. EST. "Medical Horizons" introduces its new series with a report on premature infant care from Sinai Hospital, Baltimore. The program is produced in cooperation with the American Medical Association.

MAGAZINES

Saturday Evening Post, Aug. 18, 1956

"Why Mac Isn't Dead," by John Kobler

A young man is admitted to the Norwalk (Conn.) Hospital after a serious automobile accident. The author says "what took place during (the next) twelve days was a notable, though by no means unique, example of how a modern American hospital, drawing upon improved resources of surgery, medicine, pharmaceutics and psychiatry, accomplishes seeming miracles of lifesaving."

Saturday Evening Post, Aug. 25, 1956

"I Married a Polio Victim," by Paul M. Mellinger as told to Neil M. Clark

"A husband tells the moving story of how he and his permanently crippled wife manage to lead a normal life despite her handicap."

Reader's Digest, Sept., 1956

"Medicine's Humble Humbug," by J. D. Ratcliff

The placebo is important in medicine. "The explanation," says the author, "is that most of us are highly suggestible and our mental attitude plays a powerful role in sickness."

"First Aid for Poisoned Children," by Selwyn James

"Accidental poisoning kills more young children than polio, diphtheria and scarlet fever combined. Today, in 33 cities, Poison Control Centers are striving to reduce this dreadful toll." A longer version of this article appears in the Sept., 1956, *Parents' Magazine.*

"Mystery and Misery of the Backache," by Ernest Havemann

Backache "probably causes more general discomfort than anything except the common cold. . . . A concerted effort is being made today to get at the real causes and cures. . . ."

"He Brought My People Back to Life," by Clarence W. Hall

The work of medical missionary Dr. Frank Beck, who recently retired as head of a Methodist mission hospital in La Paz, Bolivia, is presented.

Coronet, Sept., 1956

"Spare Parts for Humans," by Martin L. Gross

The author says the "most dramatic of all modern medical miracles (is) the new science of replacement medicine." He describes how skin, bones, veins, and even heart valves can be replaced.

"God's Gospel Physicians," by Booton Herndon

The Seventh-Day Adventists spread the gospel by sending doctors, technicians and nurses all over the world.

"The Amazing Story of the Blitz Diet"

The magazine repeats an earlier plug for a two-day diet based on cottage cheese.

Family Circle, Sept., 1956

"Are You Sure It's Your Heart?" by H. M. Marvin, M.D.

"Widening interest in heart disease has led many persons to mistake common complaints for symptoms of heart trouble. A past president of the American Heart Association tells what "may—or may not—be significant with this vital organ."

Ladies' Home Journal, Sept., 1956

"Radioactivity and the Human Race," by Dorothy Thompson

This is a discussion of the report issued recently by the Genetics Committee of the National Academy of Sciences, which said radiations from radioactive substances can be humanly harmful.

Town Journal, Sept., 1956

"How All Kids Can Have Better Sight," by Clyde Hostetter

Since 1940, members of the Kansas Optometric Association have checked the eyes of school children on a voluntary basis. The article recommends that parents "ask your local eye specialist" about running similar tests or purchase a Massachusetts Vision Test device that "any adult can operate."

"There's News On How to Head Off a Heart Attack," by Howard LaFay

The author says you can protect yourself against heart attack by: (1) adjusting your diet to eliminate excess fat intake; (2) exercising moderately and regularly; and (3) being alert to the warning signal of angina pectoris.

Household, Sept., 1956

"The New Hormone That Calls a Halt to Heartbreak," by Lawrence Galton

A new drug—Releasin—"promises to save most infants who otherwise would be born too soon and dead." The author calls the drug "a major discovery" and predicts it will have "potential value in some stubborn diseases that have nothing to do with pregnancy."

Look, Sept. 4, 1956

"God's Doctor to the Navajo," by David D. Zingg

"A new medical mission (operated by the Seventh-Day Adventists) is bringing modern medical services to areas like Monument Valley (in the Navajo desert) that previously had nothing to help them but the empty promises of ancient superstition."

recognized

as a potent, specific anti-arthritic

established

by over 100 million patient days

substantiated

in more than 700 published reports

BUTAZOLIDIN®

(phenylbutazone GEIGY)

potent, specific anti-arthritic

Based on an impressive background of achievement attained over a period of four years involving both long-term and short-term therapy in all the major forms of arthritis, BUTAZOLIDIN is recognized as one of the most effective anti-arthritic agents currently available.

relieves pain

improves function

resolves inflammation

BUTAZOLIDIN being a potent therapeutic agent, physicians unfamiliar with its use are urged to send for literature before prescribing it.

GEIGY

GEIGY PHARMACEUTICALS, Division of Geigy Chemical Corporation, New York 13, N. Y.

Typical Sanka Booth At Medical Conventions All Over The Country

Remember how much you enjoyed it?

You can be sure your patients will, too!

"Instant Sanka is *real* coffee — *delicious* coffee!" That's what you said at the medical conventions, when you tasted your first cup at the Instant Sanka booth.

And how right you are, Doctor. Instant Sanka is *not* a coffee substitute. It's 100% pure coffee—rich and full-bodied. Only the caffein has been removed. All the satisfying flavor is there for you to enjoy.

Why not introduce your patients to satisfying Instant Sanka Coffee? If they're sensitive to caffein, they'll be delighted to learn they don't have to give up coffee—not if they switch to delicious Instant Sanka Coffee because Instant Sanka is 97% caffein-free.

All pure coffee...
97% caffein-free

Product of
General Foods

To help your *hay-fever* patient keep

a step ahead of his allergy....

For day-long relief from sneezing, annoying nasal discharge and itching eyes: One 'Teldrin' *Spansule* on arising.

For night-long protection against sleep-hindering nasal stuffiness and pre-dawn allergic attacks: One 'Teldrin' *Spansule* at bedtime.

12 mg. 8 mg.

Teldrin*

chlorprophenpyridamine maleate

Spansule*

sustained release capsules, S.K.F.

ANTIHISTAMINE

made only by

Smith, Kline & French Laboratories

first ⧗ in sustained release oral medication

*T.M. Reg. U.S. Pat. Off. Patent Applied For.

From other Pages

Boating Has Its Hazards

Millions of Americans each year go boating in small craft on our inland and coastal waters. But this popular and delightful sport is not without its serious hazards. About 1,200 lives are lost annually in the United States as a result of accidents involving small boats, a toll of 7 per million population. More than two fifths of these deaths occur in the three months May through July. Small boat accidents account for four out of five lives lost in all types of water transportation. . . . Males constitute a large majority of the victims; their average death rate from water transportation accidents in the United States was 1.8 per 100,000 population in 1952-53, compared with 0.2 for females. . . . The death rate for males increases from less than 1 per 100,000 at the ages under 15 to a peak of 3.2 per 100,000 at ages 20-24, after which it decreases with advance in age. The relatively high mortality from this cause among young men undoubtedly reflects, in addition to the large numbers participating in boating activities, their greater readiness to expose themselves to danger. . . . Motor-driven craft, very largely of the outboard type, accounted for three fifths of the deaths in small boat accidents in which the type of craft was stated. Rowboats were involved in about one fifth of the deaths, while canoes and rafts accounted for virtually all the others. Only two of the fatalities involved sailboats, a surprisingly small number in view of the popularity of sailing. Nearly three out of every five insured who drowned in small boat accidents were out fishing when the mishap occurred. . . . That most of the deaths in this study were preventable is clear from a review of the circumstances under which they occurred. The death claim records show that in many instances small boats turned over when occupants stood up or shifted their position in the craft. Overloading was also responsible for an appreciable number of deaths. Others resulted from such dangerous practices as speeding, sharp turning, and engaging in horseplay near dams or falls. A goodly number of the persons drowned did not know how to swim; in some instances they were alone or with fellow passengers who also were nonswimmers. . . . Sudden squalls, severe winds, and treacherous currents not infrequently played a part in causing small boat accidents. Boats hitting submerged objects also added to the toll of victims. . . . It is foolhardy to venture out without adequate knowledge of how to operate a boat safely. Crafts should be checked periodically for soundness of condition as well as for the adequacy of lifesaving equipment. Warnings on storms and water conditions should be heeded. Persons who cannot swim should stay out of small boats or be in the company of several expert swimmers.—Boating Has Its Hazards, *Statistical Bulletin Metropolitan Life Insurance Company,* June, 1956.

The Liberally-Educated Man

This definition was prepared by faculty members of a group of private preparatory schools and colleges, as part of a report entitled "General Education in Schools and Colleges."

The liberally-educated man is articulate, both in speech and writing. He has a feel for language, a respect for clarity and directness of expression and a knowledge of some language other than his own. He is at home in the world of quantity, number and measurement. He thinks rationally, logically, objectively, and knows the difference between fact and opinion. When the occasion demands, however, this thought is imaginative, sensitive to form and affected by beauty. His mind is flexible and adaptable, curious and independent. He knows a good deal about the world culture of which he is a part, but he is never merely "well-informed." He can use what he knows, with judgment and discrimination. He thinks of his business or profession, his family life, and his avocations as parts of a large whole, parts of a purpose which he has made his own. Whether making a professional or a personal decision, he acts with maturity, balance, and perspective, which comes ultimately from his knowledge of other persons, other problems, other times and places.

He has convictions which are reasoned, although he cannot always prove them. He is tolerant about the beliefs of others because he respects sincerity and is not afraid of ideas. He has values, and he can communicate them to others not only by word but by example. His personal standards are high; nothing short of excellence will satisfy him. But service to his society or to his God, not personal satisfaction alone, is the purpose of his excelling.

Above all, the liberally-educated man is never a type. He is always a unique person, vivid in his distinction from other similarly educated persons, while sharing with them the traits we have mentioned.—From the *Bronze Mortar* (Columbia University—College of Pharmacy) June, 1956.

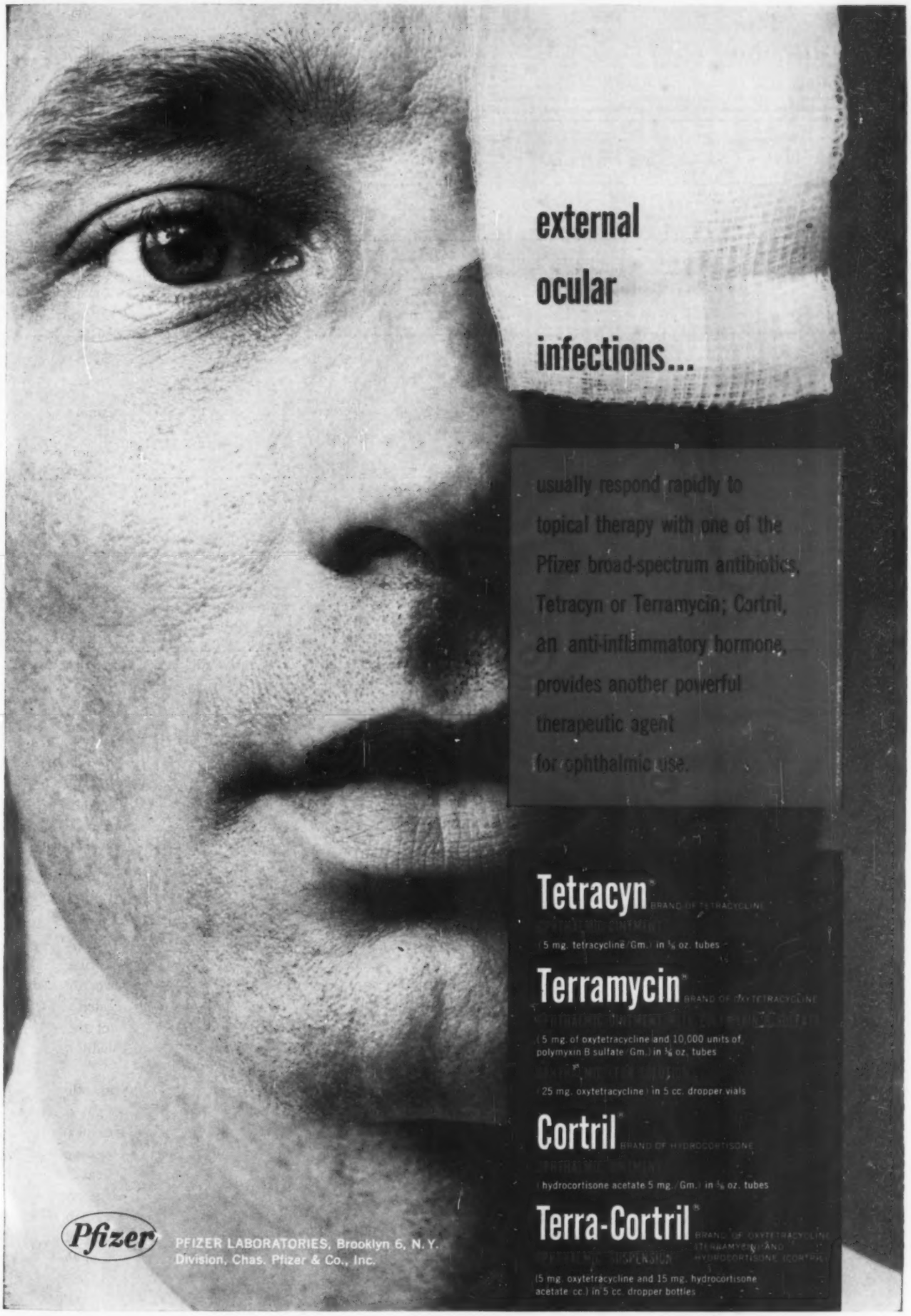
The First Prescription

As of today, the oldest collection of prescriptions in the history of man is inscribed in the cuneiform script and in the Sumerian language on a clay tablet, 3¾ x 6¼ inches, which is now in the University Museum in Philadelphia. To judge from the script, it was actually written about 2100 B.C. The tablet was excavated in Nippur, the cultural center of Sumer, some fifty years ago, and has been most recently studied and translated in large part by Martin Levey, a chemist specializing in the history of science and technology, and myself.

The Sumerian doctor, we learned from this document, went to botanical, zoological, and mineralogical sources for his materia medica. His favorite minerals were sodium chloride and potassium nitrate. From the animal kingdom he utilized milk, snake-skin, and turtle-shell. But most of his medicinals came from the botanical world, from plants such as cassia, myrtle, asafoetida, alkali, and thyme, and from trees such as the willow, pear, fir, fig, and date. These simples were prepared from the seed, root, branch, bark, or gum.

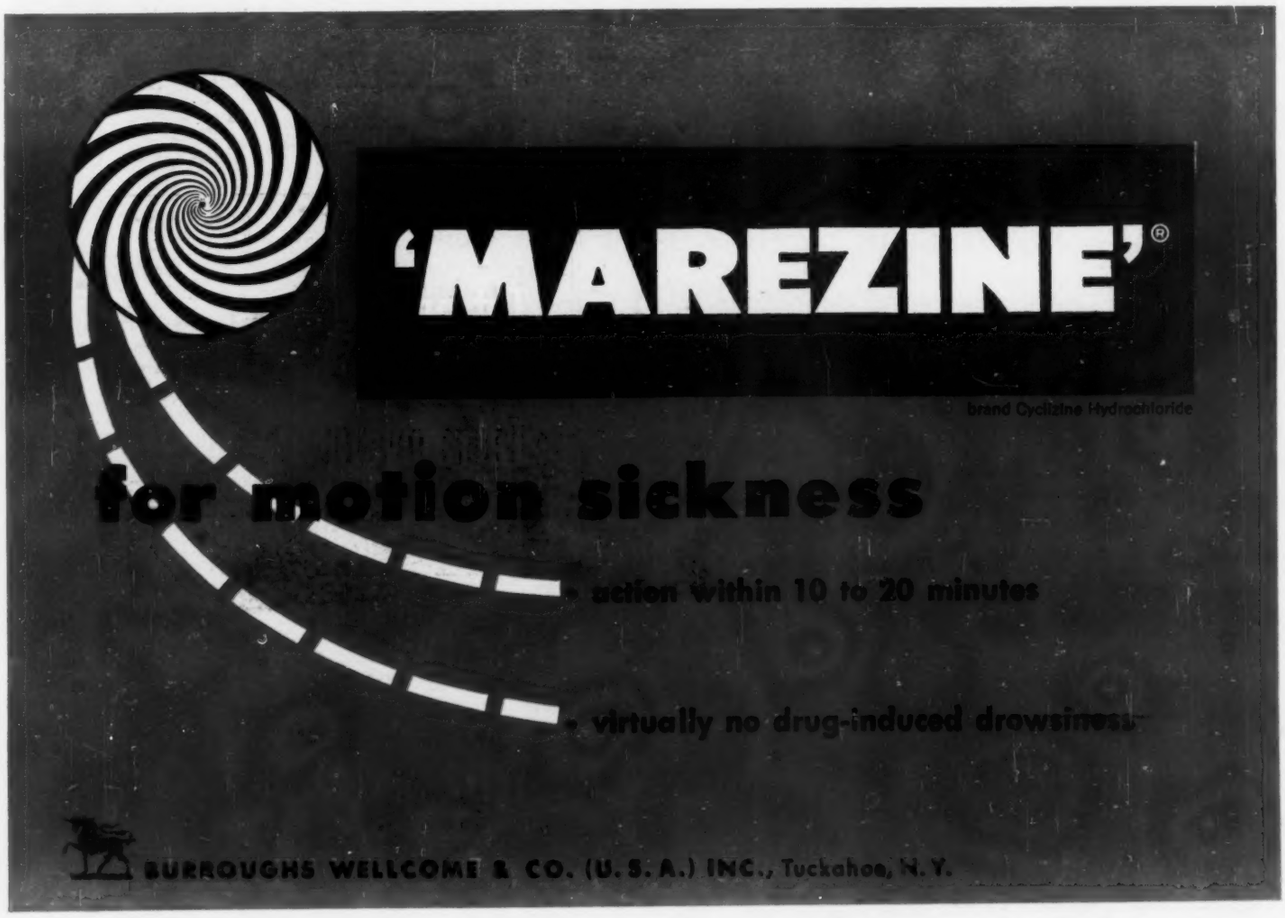
The remedies prescribed were both salves and filtrates to be applied externally, as well as liquids to be taken internally. In case of the salves, the instructions were usually to pulverize one or more simples, to infuse them with Kushumma wine, and then spread common tree oil as well as cedar oil over the mixture. The filtrate prescriptions were more complicated and were followed by directions for treatment. In case of the remedies which were to be taken internally, beer was usually the vehicle which made them palatable to the patient.

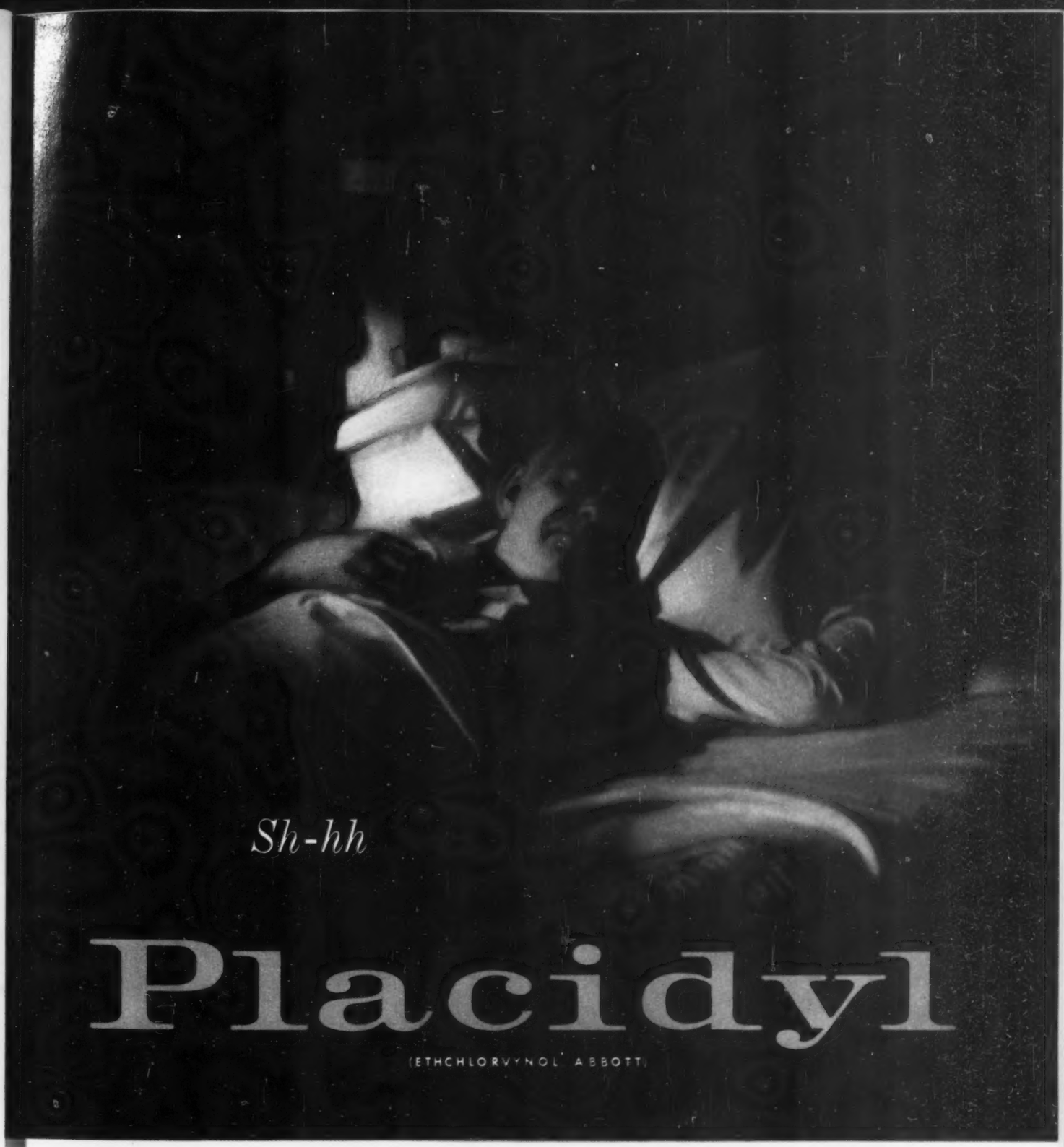
Disappointingly enough, the text fails to name the diseases for which the remedies were intended. Nor does it specify the quantities to be used in compounding the simples, or the dosage and applicating frequency of the medicine. In one respect, however, it stands out from many other ancient medical documents: it does not resort to magic spells and incantations; not one god or demon is mentioned in the text.—Samuel Noah Kramer, M.D., The First Prescription in Man's Recorded History: A Sumerian Clay Tablet from 2000 B. C., *Bulletin of the History of Medicine,* January-February, 1956.


external
ocular
infections...
usually respond rapidly to topical therapy with one of the Pfizer broad-spectrum antibiotics, Tetracyn or Terramycin; Cortril, an anti-inflammatory hormone, provides another powerful therapeutic agent for ophthalmic use.
Tetracyn®
BRAND OF TETRACYCLINE
(5 mg. tetracycline/Gm.) in ⅛ oz. tubes
Terramycin®
BRAND OF OXYTETRACYCLINE
(5 mg. of oxytetracycline and 10,000 units of polymyxin B sulfate/Gm.) in ⅛ oz. tubes
(25 mg. oxytetracycline) in 5 cc. dropper vials
Cortril®
BRAND OF HYDROCORTISONE
(hydrocortisone acetate 5 mg./Gm.) in ⅛ oz. tubes
Terra-Cortril®
BRAND OF OXYTETRACYCLINE (TERRAMYCIN®) AND HYDROCORTISONE (CORTRIL®)
OPHTHALMIC SUSPENSION
(5 mg. oxytetracycline and 15 mg. hydrocortisone acetate/cc.) in 5 cc. dropper bottles
Pfizer
PFIZER LABORATORIES, Brooklyn 6, N.Y.
Division, Chas. Pfizer & Co., Inc.

LIST OF STATE MEDICAL ASSOCIATIONS

SOCIETY	PRESIDENT	EXECUTIVE OFFICER	ANNUAL MEETING
Alabama, Med. Assn. of the State of	Grady O. Segrest, Mobile	D. L. Cannon, P.O. Box 1788, Montgomery 4	Mobile, April 18-20
Alaska Territorial Medical Assn.	Louis Salazar, Ketchikan	Robert B. Wilkins, Anchorage	Ketchikan, June, 57
Arizona Medical Association	A. I. Podolsky, Yuma	D. W. Melick, 411 Security Bldg., Phoenix	Yuma, Apr. 10-13
Arkansas Medical Society	Fount Richardson, Fayetteville	Mr. Paul C. Schaefer, 215 Kelley Bldg., Ft. Smith	Little Rock, 1957
California Medical Association	Donald A. Charnock, Los Angeles	Mr. John Hunton, 450 Sutter St., San Francisco 8	Los Angeles, Apr. 28-May 1
Colorado State Medical Society	Robert T. Porter, Greeley	Mr. H. T. Sethman, 835 Republic Bldg., Denver 2	Estes Park, Sept. 5-8
Connecticut State Medical Society	Ralph T. Ogden, Hartford	Creighton Barker, 160 St. Ronan St., New Haven	
Delaware, Medical Society of	G. M. Van Valkenburg, Georgetown	N. L. Cannon, 621 Delaware Ave., Wilmington	Rehoboth Beach, Sept. 13-14
District of Columbia, Med. Soc. of	Ralph M. Caulk, Washington	Mr. T. Wiprud, 1718 M St., N.W., Washington 6	
Florida Medical Association	Francis H. Langley, St. Petersburg	Samuel M. Day, P.O. Box 1018, Jacksonville 1	Hollywood, May 5-8
Georgia, Medical Association of	Hal M. Davison, Atlanta	Mr. M. D. Krueger, 875 W. Peachtree St., N.E., Atlanta	Savannah, Apr. 21-24
Hawaii Medical Association	A. Webster Boyden, Lihue	Saturo Nishijima, 510 S. Beretania St., Honolulu	Lihue, Kauai, May 5-8
Idaho State Medical Association	Charles A. Terhune, Burley	Mr. Armand L. Bird, 364 Sonna Bldg., Boise	Sun Valley, June 16-19
Illinois State Medical Society	F. Lee Stone, Chicago	Harold M. Camp, 224 S. Main St., Monmouth	Chicago, May 21-24
Indiana State Medical Association	Walter U. Kennedy, New Castle	Mr. James A. Waggener, 23 E. Ohio St., Indianapolis 4	Indianapolis, Oct. 16-18
Iowa State Medical Society	Wendell L. Downing, Le Mars	R. F. Birge, 529 36th St., Des Moines 12	Des Moines, Apr. 28-May 1
Isthmian Canal Zone, Med. Assn. of	A. Vincente-Mastellari, Ancon	E. R. Osterberg, Box "O," Gorgas Hospital, Ancon	
Kansas Medical Society	Clyde W. Miller, Wichita	Mr. Oliver E. Ebel, 315 W. Fourth St., Topeka	Wichita, May 5-9
Kentucky State Medical Association	J. Gant Gaither, Hopkinsville	Mr. J. P. Sanford, 620 S. Third St., Louisville 2	Louisville, Sept. 18-20
Louisiana State Medical Society	Paul D. Abramson, Shreveport	C. Grenes Cole, 1430 Tulane Ave., New Orleans 12	New Orleans, May 5-8
Maine Medical Association	Armand Albert, Van Buren	D. F. Hanley, Coe Infirm., Bowdoin Coll., Brunswick	Rockland, June 23-25
Maryland, Med. and Chir. Faculty of	William H. F. Warthen, Towson	Everett S. Diggs, 1211 Cathedral St., Baltimore	Baltimore, May 1-3
Massachusetts Medical Society	Howard F. Root, Boston	Robert W. Buck, 22 The Fenway, Boston 15	Boston, May 21-23
Michigan State Medical Society	William S. Jones, Menominee	L. F. Foster, 606 Townsend St., Box 539, Lansing 15	Detroit, Sept. 26-28
Minnesota State Medical Association	R. H. Wilson, Winona	Mr. R. R. Rosell, 496 Lowry Med. Arts Bldg., St. Paul 2	St. Paul, May 13-15
Mississippi State Medical Association	H. C. Ricks, Jackson	Mr R. B. Kennedy, P.O. Box 4322, Jackson	
Missouri State Medical Association	Carl F. Vohs, St. Louis	E. Royse Bohrer, 634 N. Grand Blvd., St. Louis 3	Kansas City, Mar. 31-Apr. 3
Montana Medical Association	George W. Setzer, Malta	Mr. L. R. Hegland, P.O. Box 1692, Billings	Great Falls, Sept. 13-15
Nebraska State Medical Association	J. M. Woodward, Lincoln	R. B. Adams, 1315 Sharp Bldg., Lincoln 8	Omaha, May 13-16
Nevada State Medical Association	Fred M. Anderson, Reno	Mr. Nelson B. Neff, P.O. Box 188, Reno	
New Hampshire Medical Society	Louis C. Theobald, Exeter	W. H. Butterfield, 18 School St., Concord	Newcastle, N. H., Sept. 27-29
New Jersey, Medical Society of	Lewis C. Fritts, Somerville	Mr. Richard I. Nevin, 315 W. State St., Trenton 8	
New Mexico Medical Society	Stewart W. Adler, Albuquerque	Mr. R. R. Marshall, 221 W. Central Ave., Albuquerque	Santa Fe, May '57
New York, Med. Soc. of the State of	James Greenough, Oneonta	W. P. Anderton, 386 Fourth Ave., New York 16	New York, May 13-15
N. Carolina, Med. Soc. of the State of	Donald B. Koonce, Wilmington	Mr. James T. Barnes, 203 Capitol Club Bldg., Raleigh	Asheville, May 5-8
North Dakota State Medical Assn.	R. H. Waldschmidt, Bismarck	Mr. Lyle Limond, Box 1198, Bismarck	Fargo, May 25-28
Ohio State Medical Association	Richard L. Meiling, Columbus	Mr. C. S. Nelson, 79 East State St., Columbus 15	
Oklahoma State Medical Association	H. M. McClure, Chickasha	Mr. R. H. Graham, 1227 Classen Dr., Oklahoma City 3	Tulsa, May 5-8
Oregon State Medical Society	E. G. Chuinard, Portland	R. R. Carter, 1115 S.W. Taylor St., Portland 5	Portland, Oct. 16-20
Pennsylvania, Med. Soc. of State of	Robert L. Schaeffer, Alleptown	H. B. Gardner, 230 State St., Harrisburg	Atlantic City, N.J., Oct. 21-26
Puerto Rico Medical Association	Jaime F. Pou, Hato Rey	Mr. J. A. Sanchez, Box 9111, Santurce	San Juan, Dec. 4-9
Rhode Island Medical Society	Charles L. Farrell, Pawtucket	Thomas Perry Jr., 106 Francis St., Providence 3	Providence, May 1-2
South Carolina Medical Association	William H. Prioleau, Charleston	Mr. M. L. Meadors, 120 W. Cheves St., Florence	Myrtle Beach, May 14-16
South Dakota State Medical Assn.	A. P. Peeke, Volga	Mr. J. C. Foster, 1st Nat'l Bank Bldg., Sioux Falls	Sioux Falls, May 18-21
Tennessee State Medical Association	R. B. Wood, Knoxville	Mr. Jack E. Ballentine, 112 Louise Ave., Nashville 5	Nashville, Apr. 7-10
Texas Medical Association	Milford O. Rouse, Dallas	Mr. C. L. Williston, 1801 N. Lamar Blvd., Austin	Dallas, Apr. 28-May 1
Utah State Medical Association	R. O. Porter, Logan	Mr. H. Bowman, 42 S. Fifth East St., Salt Lake City 2	Salt Lake City, Sept. 6-8
Vermont State Medical Society	W. Douglas Lindsay, Montpelier	Robert L. Richards, 128 Merchants Row, Rutland	Newcastle, N. H., Sept. 27-29
Virginia, Medical Society of	James P. King, Radford	Mr. R. I. Howard, 1105 W. Franklin St., Richmond 20	Roanoke, Oct. 14-17
Washington State Medical Assn.	I. C. Munger, Vancouver	Frederick A. Tucker, 1309 Seventh Ave., Seattle 1	Seattle, Sept. 16-19
West Virginia State Medical Assn.	Athey R. Lutz, Parkersburg	Mr. Charles Lively, Box 1031, Charleston 24	
Wisconsin, State Medical Society of	L. O. Simenstad, Osceola	Mr. C. H Crownhart, P.O. Box 1109, Madison 1	Milwaukee, May 7-9
Wyoming State Medical Society	Joseph S. Hellewell, Evanston	Mr. Arthur Abbey, Box 2036, Cheyenne	


'MAREZINE'®
brand Cyclizine Hydrochloride
for motion sickness
action within 10 to 20 minutes
virtually no drug-induced drowsiness
BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.



nudges your patient to sleep

One 500-mg. capsule of this new nonbarbiturate gently relieves ordinary nervous insomnia. Excellent in presence of mild anxiety or unrest, chronic disease, old age, and small hour waking. Abbott

609021

Selsun®

...most effective treatment known for seborrheic dermatitis of the scalp and dandruff...

Your prescription for Selsun assures patients lasting relief from itching, scaling, burning scalps. And patients appreciate the ease of using Selsun: applies like a shampoo, rinses out easily, leaves both hair and scalp clean. Selsun Suspension completely controls 81-87% of seborrheic dermatitis, 92-95% of dandruff cases. Each 4-fluidounce bottle carries full directions.

Abbott

*Selenium Sulfide, Abbott

609022

For Initial Therapy in

Every Case of HYPERTENSION

Rauwiloid®

Effective in up to 80% of mild hypertensives[1] and in many patients with more severe forms of hypertension.[2]

Rauwiloid represents the balanced, mutually potentiated actions[3] of several Rauwolfia alkaloids, of which reserpine and the equally antihypertensive rescinnamine have been isolated.

Hence, reserpine is not the total active antihypertensive principle of the rauwolfia plant.

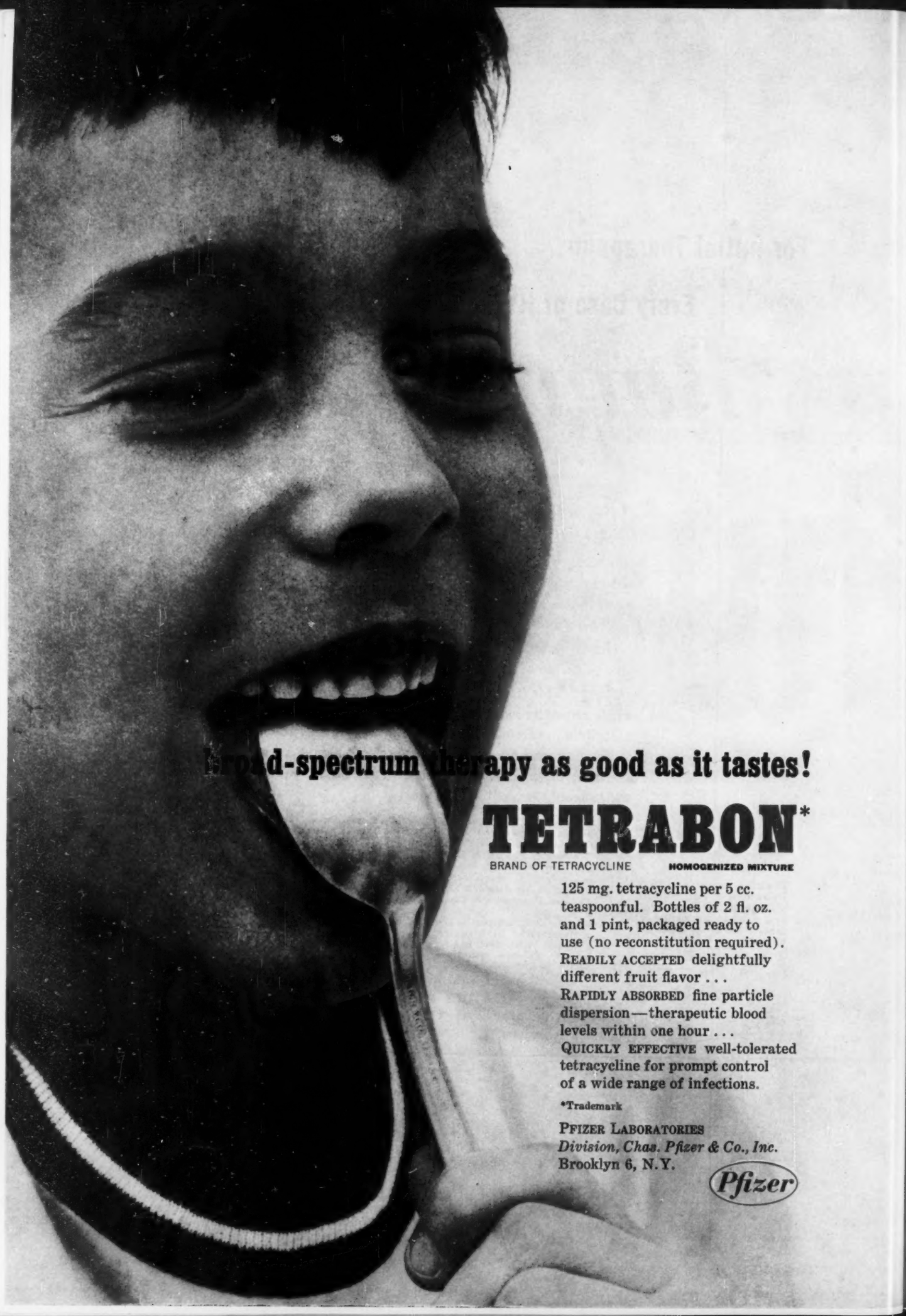
Rauwiloid is freed of the undesirable alkaloids of the whole rauwolfia root. Recent investigations confirm the desirability of Rauwiloid (because of the balanced action of its contained alkaloids) over single alkaloidal preparations; "...mental depression...was...less frequent with alseroxylon..."[4]

1. Moyer, J. H., in discussion of Galen, W. P., and Duke, J. E.: Outpatient Treatment of Hypertension with Hexamethonium and Hydralazine, South, M. J. *47*:858 (Sept.) 1954.
2. Finnerty, F. A., Jr.: The Value of Rauwolfia Serpentina in the Hypertensive Patient, Am. J. Med. *17*:629 (Nov.) 1954.
3. Cronheim, G., and Toekes, I. M.: Comparison of Sedative Properties of Single Alkaloids of Rauwolfia and Their Mixtures, Meet. Am. Soc. Pharmacol. & Exper. Therap., Iowa City, Iowa, Sept. 5, 1955.
4. Moyer, J. H.; Dennis, E., and Ford, R.: Drug Therapy (Rauwolfia) of Hypertension. II. A Comparative Study of Different Extracts of Rauwolfia When Each Is Used Alone (Orally) for Therapy of Ambulatory Patients with Hypertension, A.M.A. Arch. Int. Med. *96*:530 (Oct.) 1955.

The dose-response curve of Rauwiloid is flat, and its dosage is uncomplicated and easy to prescribe... merely two 2mg. tablets at bedtime.

Rauwiloid is the original alseroxylon fraction of India-grown Rauwolfia serpentina, Benth., a Riker research development.

Riker LOS ANGELES



Broad-spectrum therapy as good as it tastes!

TETRABON*

BRAND OF TETRACYCLINE **HOMOGENIZED MIXTURE**

125 mg. tetracycline per 5 cc. teaspoonful. Bottles of 2 fl. oz. and 1 pint, packaged ready to use (no reconstitution required).
READILY ACCEPTED delightfully different fruit flavor . . .
RAPIDLY ABSORBED fine particle dispersion—therapeutic blood levels within one hour . . .
QUICKLY EFFECTIVE well-tolerated tetracycline for prompt control of a wide range of infections.

*Trademark

PFIZER LABORATORIES
Division, Chas. Pfizer & Co., Inc.
Brooklyn 6, N.Y.

Pfizer

Upjohn

Delta-Cortef* for inflammation, neomycin for infection:

Neo-Delta-Cortef

TOPICAL OINTMENT

Each gram contains:

Prednisolone (delta-1-hydrocortisone) acetate .....5 mg. (0.5%)

Neomycin sulfate .....5 mg. (equiv. to 3.5 mg. neomycin base)

Methylparaben .....0.2 mg.

Butyl-p-hydroxybenzoate 1.8 mg.

Supplied: 5-gram tubes

EYE-EAR OINTMENT

Each gram contains:

Prednisolone (delta-1-hydrocortisone) acetate .....2.5 mg. (0.25%)

Neomycin sulfate .....5 mg. (equiv. to 3.5 mg. neomycin base)

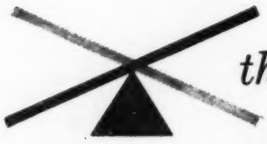
Supplied: ⅛ oz. tubes with applicator tip

*TRADEMARK

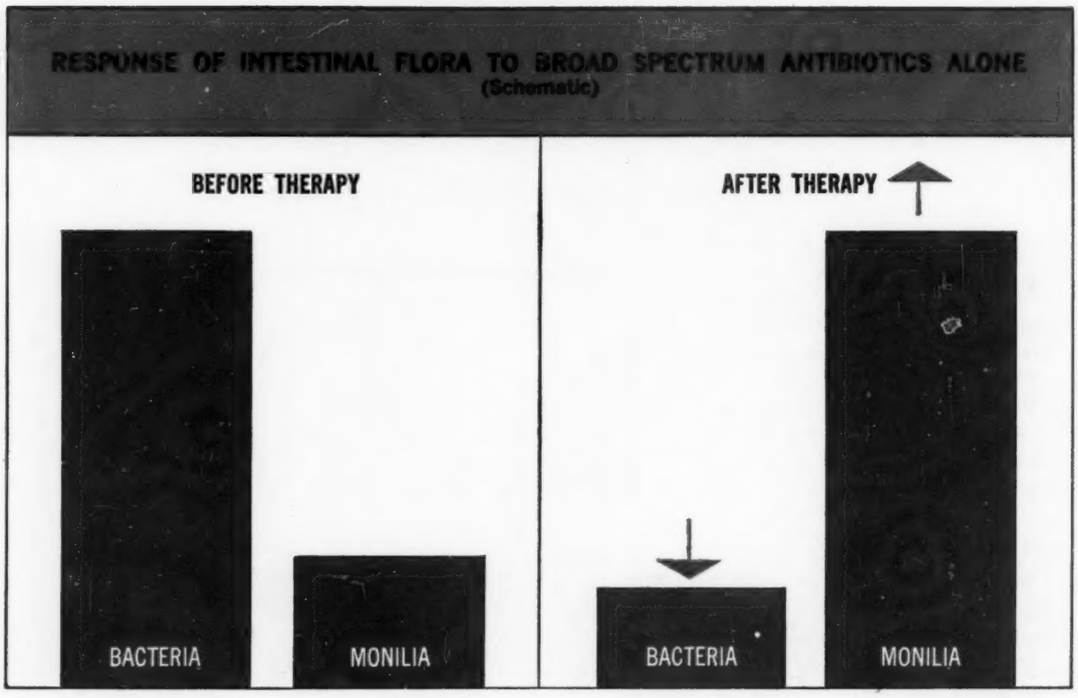
†TRADEMARK FOR THE UPJOHN BRAND OF PREDNISOLONE ACETATE WITH NEOMYCIN SULFATE

The Upjohn Company, Kalamazoo, Michigan

COMMON THERAPEUTIC PROBLEM:



the "see-saw" antimicrobial effect of broad spectrum antibiotics



SQUIBB

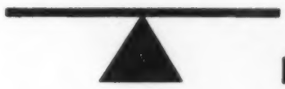
Squibb Quality–the Priceless Ingredient

Mysteclin Capsules—Containing 250 mg. Steclin (Squibb Tetracycline) Hydrochloride and 250,000 units Mycostatin (Squibb Nystatin). Bottles of 16 and 100.

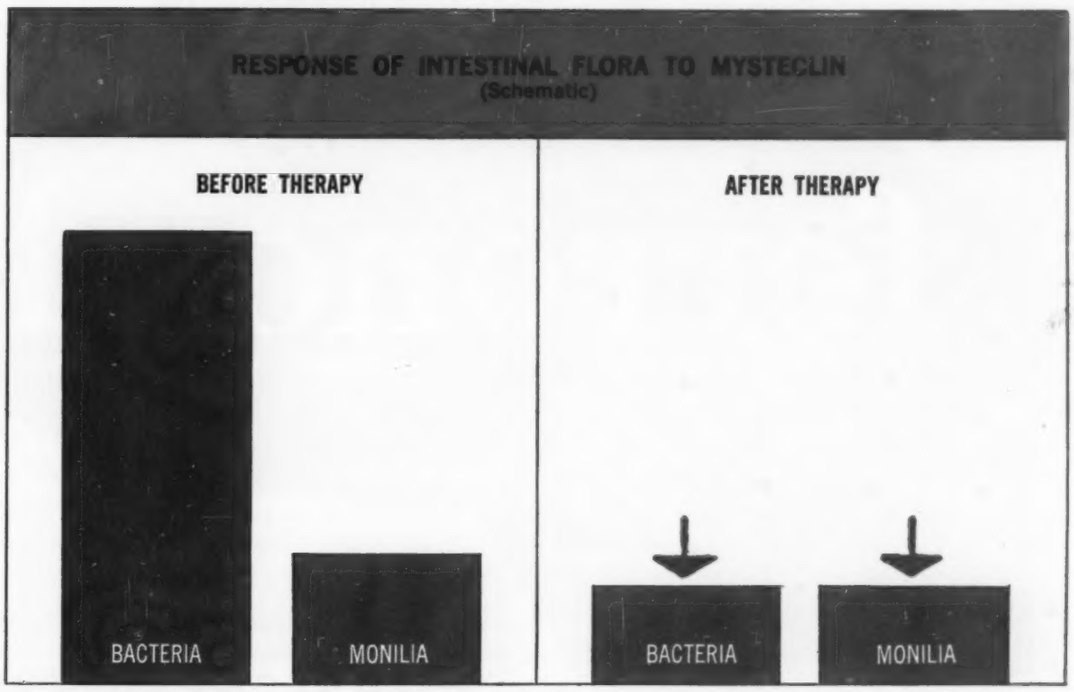
Mysteclin Half Strength Capsules — Containing 125 mg. Steclin (Squibb Tetracycline) Hydrochloride and 125,000 units Mycostatin (Squibb Nystatin). Bottles of 16 and 100.

NEW . . . Mysteclin Suspension—Containing the equivalent of 125 mg. Steclin (Squibb Tetracycline) Hydrochloride and 125,000 units Mycostatin (Squibb Nystatin) per 5 cc. teaspoonful. Bottles of 2 ounces.

'MYSTECLIN'®, 'STECLIN® AND 'MYCOSTATIN'® ARE SQUIBB TRADEMARKS



NOW... *balanced antimicrobial therapy*



MYSTECLIN

Steclin-Mycostatin (Squibb Tetracycline-Nystatin)

the only broad spectrum antibiotic preparation with added protection against monilial superinfection

well tolerated iron therapy

ferronord™*

(brand of ferroglycine sulfate complex†)

increases serum iron levels rapidly...

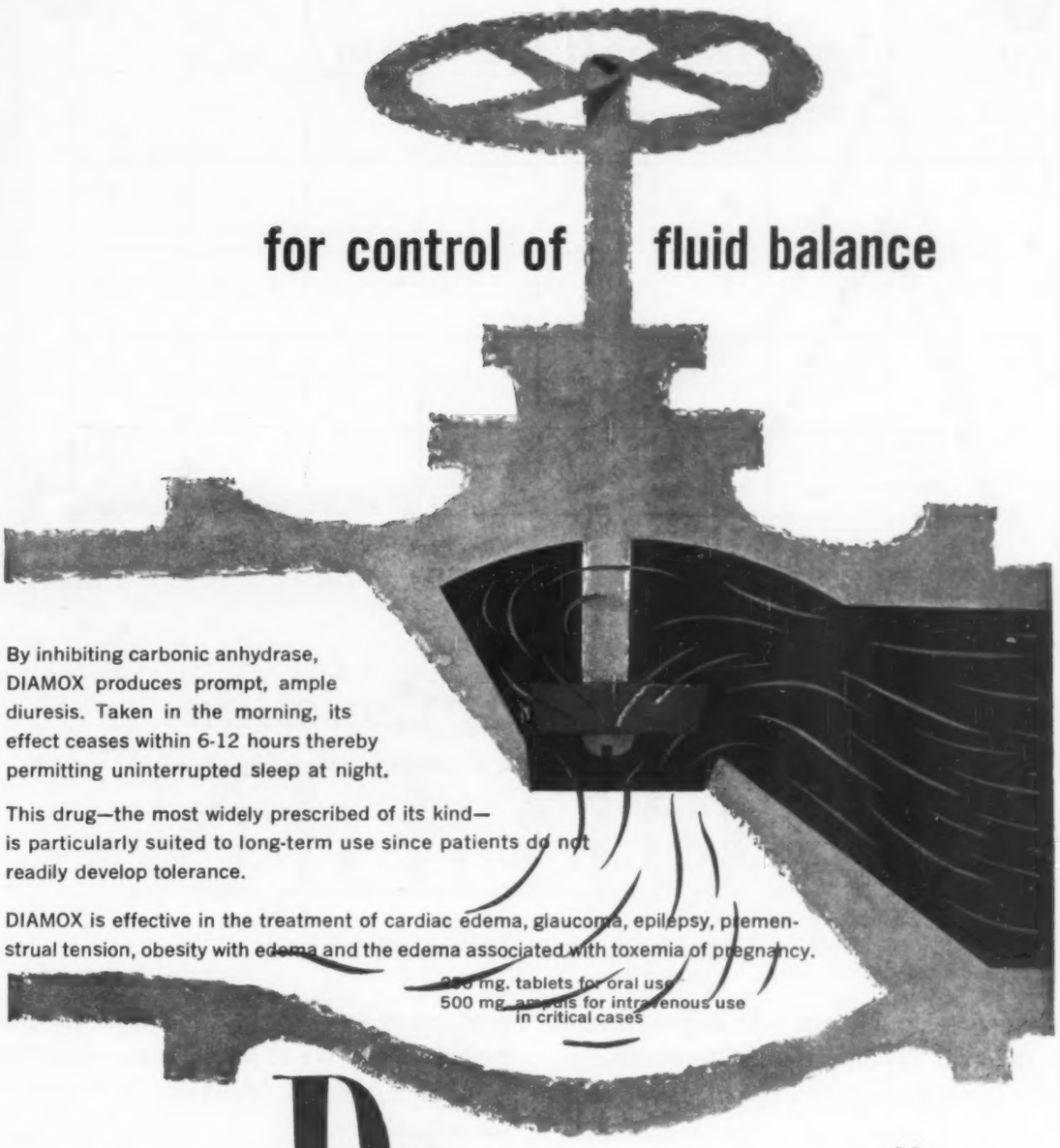
raises hemoglobin levels in a matter of days...

Now available through leading pharmacies, FERRONORD is supplied in bottles of 100 tablets. Each tablet provides 40 mg. of ferrous iron.

*Trademark—Pat. Pending. †alpha-aminoacetic-ferrous sulfate complex exsiccated

NORDMARK PHARMACEUTICAL LABORATORIES, INC., IRVINGTON, N. J.

Suppliers of fine chemicals to the pharmaceutical industry for more than a quarter of a century.



for control of fluid balance

By inhibiting carbonic anhydrase, DIAMOX produces prompt, ample diuresis. Taken in the morning, its effect ceases within 6-12 hours thereby permitting uninterrupted sleep at night.

This drug—the most widely prescribed of its kind—is particularly suited to long-term use since patients do not readily develop tolerance.

DIAMOX is effective in the treatment of cardiac edema, glaucoma, epilepsy, premenstrual tension, obesity with edema and the edema associated with toxemia of pregnancy.

250 mg. tablets for oral use
500 mg. ampuls for intravenous use in critical cases

Diamox*

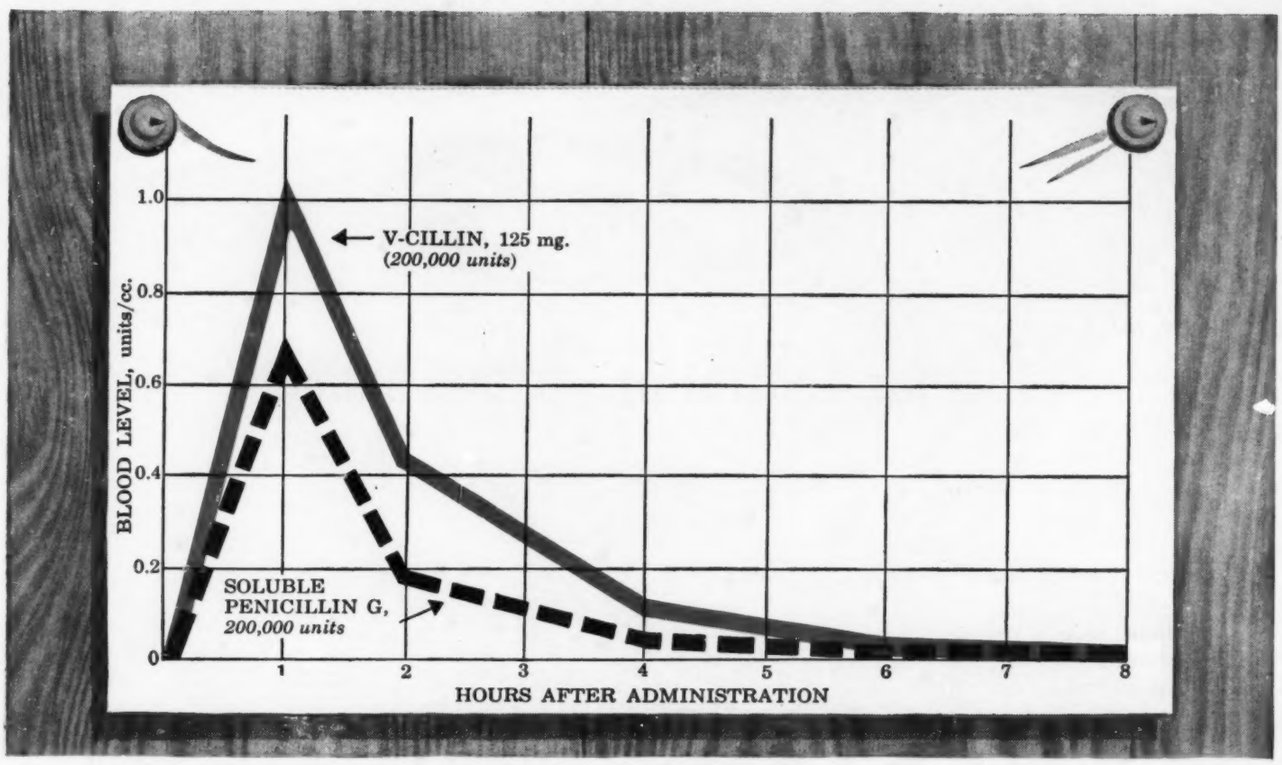
Acetazolamide Lederle

a nonmercurial diuretic

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

Lederle

*REG. U. S. PAT. OFF.



dependable oral penicillin

V-CILLIN

(PENICILLIN V, LILLY)
(PHENOXYMETHYL PENICILLIN)

'V-Cillin' was developed by the Lilly Research Laboratories to fulfill the need for an acid-resistant penicillin—for a dependable and effective oral penicillin.

Gastric acidity does not significantly affect the potency of 'V-Cillin' ('V-Cillin' is an acid). In contrast, 50 percent of the potency of potassium penicillin G may be destroyed by gastric acids, in ten to thirty minutes. Thus, 'V-Cillin' largely eliminates a major variable in oral penicillin therapy, produces 50 to 100 percent higher blood levels, and makes the oral use of penicillin more feasible.

In the duodenum, absorption of 'V-Cillin' begins immediately.

DOSAGE: 125 or 250 mg. t.i.d. May be administered without regard to mealtimes.

SUPPLIED: Pulvules—125 and 250 mg. Pediatric suspension —125 mg. per 5-cc. teaspoonful.

Lilly
QUALITY / RESEARCH / INTEGRITY

80TH ANNIVERSARY 1876 · 1956

613063

ELI LILLY AND COMPANY · INDIANAPOLIS 6, INDIANA, U.S.A.

THE JOURNAL

of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 162, NO. 1 CHICAGO, ILLINOIS SEPTEMBER 1, 1956
COPYRIGHT, 1956, BY AMERICAN MEDICAL ASSOCIATION

URINARY TRACT INFECTIONS CAUSED BY ANTIBIOTIC-RESISTANT COLIFORM BACILLI

William M. M. Kirby, M.D., Douglas O. Corpron, M.D.
and
Donald C. Tanner, M.D., Seattle

• *Nosocomial (hospital-acquired) infections are receiving increasing attention and are often serious when they occur, since micro-organisms that become widely disseminated in the hospital environment are frequently resistant to commonly used chemotherapeutic agents. The chief interest in recent years has centered around infections caused by Micrococcus (Staphylococcus) pyogenes var. aureus.*

The present study indicates that infections with antibiotic-resistant coliform bacteria may also occur commonly in hospitals. It is well known that catheterization and instrumentation of the urinary tract frequently lead to urinary tract infections, but the relationship of such infections to organisms present in the hospital environment is not commonly appreciated. The authors were unable to determine the source of the resistant bacteria and the exact mode of infection; the catheters themselves, and the solutions used to irrigate them, could not be incriminated. Blankets, mattresses, and possibly the nasopharyngeal flora of hospital personnel appeared more likely possibilities.

Results of antibiotic sensitivity tests from other hospital laboratories indicate that hospital-acquired infections with antibiotic-resistant coliform bacteria may be a widespread problem, and one that is largely unrecognized.

Infections caused by antibiotic-resistant bacteria have become a widespread and serious problem, chiefly with one organism, the Micrococcus (Staphylococcus). Such infections are usually acquired in the hospital, and an important focus is the nasopharyngeal flora of hospital personnel. Evidence concerning a similar increase in urinary tract infections caused by antibiotic-resistant coliform bacteria is conflicting. As pointed out in a recent comprehensive review by Finland,[1] except with streptomycin, originally sensitive strains have not been frequently observed to acquire high degrees of resistance during therapy. Much more commonly, sensitive strains have been eliminated by antibiotics and have been replaced by naturally resistant species, such as Proteus and Pseudomonas. In contrast to these results obtained in studies of individual patients, surveys from hospital laboratories have indicated a trend toward increasing resistance of coliforms, especially to tetracyclines.[2] A recent study from a general hospital laboratory revealed that more than a third of the coliform bacteria were tetracycline-resistant.[3] Our interest in resolving this discrepancy between the results obtained in individual cases and in hospital surveys was one of the chief motivations for the present study.

A study performed at this hospital two years ago showed that 29% of coliforms were resistant to tetracyclines and 43% to streptomycin.[4] It was postulated that resistant coliforms probably developed in patients with chronic infections as a result of therapy with these two antibiotics. Subsequent studies have shown that for the majority of patients this explanation is not the correct one. It appears, rather, that the patients somehow acquire infections with antibiotic-resistant coliform bacteria in the hospital, usually in association with instrumentation of the urinary tract. Details of these studies are presented in the present report.

Materials and Methods

During a three-month period, July through September, 1955, a study was made of all patients whose urine cultures, performed in the routine diagnostic bacteriology laboratory at the King County Hospital, showed a predominant growth of coliforms or of Achromobacter. Coliform bacilli were identified by their ability to ferment lactose with the production of acid and gas within 24 hours. No attempt was made to differentiate Escherichia coli from Aerobacter aerogenes. Members of the Achromobacter group were identified as described in our earlier publication.[4] After recovery of the etiological organism, antibiotic sensitivity tests were performed by the disk method with use of standards that have been found in this laboratory to correlate well with the tube dilution method. Briefly, the highest concentrations of disks were used,

From the Department of Medicine, University of Washington School of Medicine, and the King County Hospital.

and the tests were performed on Mueller-Hinton medium. With few exceptions coliforms were either highly sensitive or quite resistant to a given antibiotic. For example, organisms sensitive to chloramphenicol or tetracyclines gave zones of inhibition larger than 20 mm. in diameter and were inhibited in tryptose phosphate broth by 5 mcg. per milliliter or less. With resistant coliforms, on the other hand, zones of inhibition were under 15 mm. in diameter, and, with the tube dilution method, growth occurred in the presence of 50 mcg. per milliliter of the antibiotic. Bacteria sensitive to polymyxin B, sulfisoxazole (Gantrisin) and streptomycin gave zone diameters greater than 10, 15, and 16 mm. respectively. The majority of the antibiotic-resistant coliforms showed resistance to the tetracyclines, chloramphenicol, streptomycin, and sulfonamides and were sensitive only to polymyxin B. Approximately one-third of the strains differed from this pattern in that they were also sensitive to chloramphenicol.

Patients whose urine cultures yielded coliform bacteria or Achromobacter were studied particularly in reference to the following points: (1) nature of the urinary tract infection, (2) possible underlying disease of the urinary tract, (3) instrumentation or inlying catheters, (4) previous antibiotic therapy, (5) location in the hospital, and (6) course of the illness. In addition to this study of all patients who had urine cultures during a three-month period, the antibiotic sensitivity pattern of coliforms isolated during various one-month periods has been tabulated on seven occasions during the past two years. Detailed observations have also been made on a number of individual patients whose cultures revealed antibiotic-resistant coliforms. Some of these cases are described below.

Results

One-fifth to two-thirds of the coliform bacteria isolated at various intervals during the past two years were found to be antibiotic-resistant according to the definition described above. No clear-cut reason could be found to account for the variation observed from month to month. During the course of the study, it became apparent that our original postulate, namely, that most antibiotic-resistant coliforms were cultured from the urine of patients who had had prolonged and varied chemotherapy, was incorrect. Although this undoubtedly occurs, another mechanism seems to be of greater importance. It appears that in most cases the resistant bacteria are acquired in the hospital, usually in association with instrumentation of the urinary tract and sometimes as a result of instrumentation elsewhere in the body. A few brief case reports will illustrate this point.

Case 1.—A 20-year-old woman was receiving a continuous intravenous infusion of penicillin for the treatment of subacute bacterial endocarditis and had been afebrile for two weeks. The penicillin was administered through an indwelling catheter in one of the veins of her left leg. On March 26, 1955, she had a shaking chill and a blood culture was positive for coliform bacteria resistant to all antibiotics except polymyxin B. A pour plate made from 1 cc. of the patient's blood contained 112 colonies of bacteria. The skin around the site of the cut-down was red and inflamed. She was treated with chloramphenicol, and the fever and swelling subsided within five days.

Case 2.—A 65-year-old female entered the hospital with a fractured femur on March 16, 1955. Initial urinalysis was negative, and she was not given antibiotics. An inlying catheter was inserted, and one week later the urine was noted to be cloudy. Urine was cultured on March 25th and revealed coliforms with a pattern of antibiotic resistance identical with that described in case 1.

These two patients, who were on widely separated wards of the hospital, appear to have been infected with the same organism. One infection was associated with a catheter in the bladder and the other, with a catheter inserted into a vein. Benzalkonium (Zephiran) chloride solutions used for bladder irrigations and for cleansing the skin for venipunctures were suspected, but cultures of these solutions were negative.

Case 3.—A 32-year-old female, 7 months pregnant, entered the hospital with acute bulbar poliomyelitis on Sept. 7, 1955, and was placed in a respirator. Urinalysis on admission was negative. A week after the insertion of an indwelling catheter,

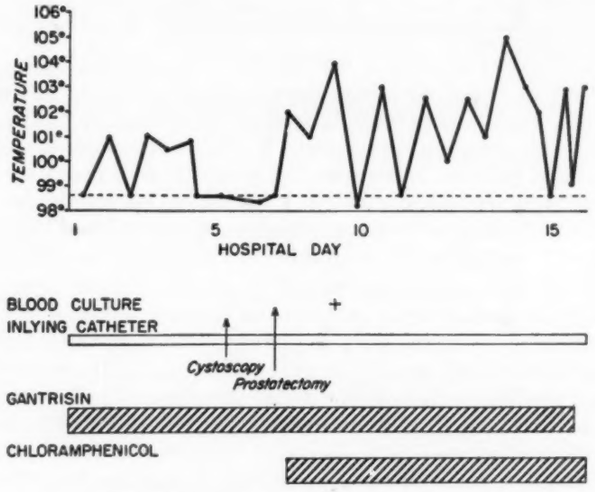


Fig. 1.—Therapy and course of patient in case 4.

the urine was cloudy and antibiotic-resistant coliforms were cultured. Although an indwelling catheter was needed for only three weeks, these same organisms were cultured repeatedly from the urine during the next four months.

Case 4.—An 82-year-old man with prostatic hypertrophy had had increasing difficulty in voiding during the previous six months and entered the hospital on July 27, 1955, with acute retention. He had received no chemotherapy. An inlying catheter was inserted, and he was given sulfisoxazole. He was cystoscoped on the sixth day, and two days later a suprapubic prostatectomy was performed. After surgery he developed shaking chills and a high temperature, and coliform bacteria sensitive only to chloramphenicol and polymyxin B were cultured from the blood stream (fig. 1). Despite therapy with sulfisoxazole and chloramphenicol, the febrile course continued, and he died on the 15th hospital day, after a massive gastrointestinal hemorrhage. At autopsy he was found to have multiple gastric ulcers and evidences of acute and chronic pyelonephritis.

In both of these instances, infection with antibiotic-resistant coliform bacteria seems clearly to have been acquired as a result of catheterization.

Case 5.—A 9-year-old boy, previously well, entered the hospital on Oct. 26, 1955, after an automobile accident. He was comatose and in shock and was taken to surgery, where a com-

pound skull fracture was treated and a ruptured spleen was removed. An inlying catheter was inserted into his bladder, and he was treated with penicillin and chloramphenicol (fig. 2). The hospital course was stormy and febrile, and on the seventh day coliform bacteria sensitive only to chloramphenicol and polymyxin B were cultured from the blood stream. The pour plate showed a growth of 70 colonies per cubic centimeter of

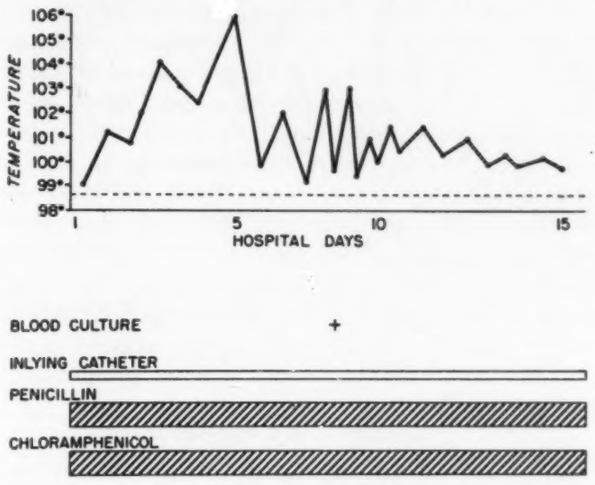


Fig. 2.—Therapy and course of patient in case 5.

the patient's blood. The urine was cloudy and showed an increased number of red blood cells, white blood cells, and protein but was not cultured. During the second week, he showed gradual improvement, and on the 14th day he was transferred to another hospital. Follow-up data are not available.

In this instance, the coliform bacteria recovered from the blood stream had characteristics identical with those recovered in cases 3 and 4. These bacteria may have gained access as a result of the catheter in the bladder, although other possibilities are present, since he had two operations and also received continuous intravenous infusions of fluids and electrolytes.

Three-Month Survey.—From July 1 through Sept. 30, 1955, urine cultures from 85 patients revealed a predominant growth of coliform bacilli (see table). In 41

Analysis of Patients Whose Urine Cultures Showed a Predominant Growth of Coliform Bacteria, or Achromobacter, Sensitive or Resistant to Antibiotics

	Coliforms		
	Antibiotic-Sensitive	Antibiotic-Resistant	Achromobacter
Total patients	41	44	14
Positive blood culture	10	1	1
Repeated catheterization or inlying catheter	4	42	13
Acute symptoms at time of culture	33	9	2
Obstructive lower urinary tract disease	5	25	8
Previous therapy with chemotherapeutic agents against which the bacteria were resistant	0	6	0

patients the organisms isolated were antibiotic-sensitive, and in 44 they were resistant. Approximately half of the resistant strains showed sensitivity only to polymyxin B, while the remainder were sensitive to both polymyxin and chloramphenicol. Striking differences were observed between the two groups of patients, as indicated in the table. The patients with antibiotic-sensitive organisms were in general those with acute urinary tract symptoms at the time of admission to the hospital. The incidence of obstructive lower urinary tract disease was low, and few had had recent catheterizations. It is of interest that 10 of the 41 patients in this group had bacteremia. In those with resistant bacteria, on the other hand, there was a high correlation with recent catheterization or instrumentation of the urinary tract. Many of these patients entered the hospital without symptoms of a urinary tract infection, and the urine became cloudy and infected only after an inlying catheter had been in place for several days. In this group the incidence of underlying urinary tract obstruction was relatively high, although, in a number of patients who developed infections in association with indwelling catheters, there was no evidence of underlying urinary tract disease. In only 6 of the 44 cases was it probable that the patient had had therapy with all the chemotherapeutic agents to which the bacteria were resistant.

In 14 patients, the predominant organism cultured from the urine was Achromobacter. As noted in our earlier study,[4] this organism was cultured from the urine of patients with prolonged catheterization. In the one patient with a positive blood culture, the organism appears to have entered the blood through an infection around an intravenous catheter. This patient did not have a catheter in the bladder.

Comment

The present studies appear to clarify the paradox described in the introduction, namely, that, while coliform bacilli have not often been observed to acquire antibiotic resistance during therapy of individual patients,[1] surveys from hospital laboratories indicate that a relatively high percentage of all coliforms isolated from urine cultures are resistant to a number of chemotherapeutic agents.[5] The explanation seems to lie in the fact that the resistant bacteria are acquired in the hospital, chiefly in patients with indwelling catheters. The exact source of the resistant coliforms and their mode of entry into the body remain unexplained. One possibility is that the catheters themselves, or solutions used to irrigate them, become contaminated in the central supply area before they are sent out to the wards. This explanation is logical and attractive, but we have been unable to obtain any information to support it. Cultures of both catheters and irrigating solutions have consistently failed on many occasions during the past two years to show any evidence of contamination. Another possibility is that coliforms are carried in the nasopharyngeal flora of the hospital personnel in the same way as micrococci. Again, we have no convincing studies and further investigation along this line is contemplated. We have noted that coliforms are often isolated from the nasopharynx during carrier studies for micrococci, but antibiotic sensitivity tests have not been performed. If the nasopharynx is an important focus, the bacteria may multiply in the patient's intestine and may eventually gain access to the urinary

tract by way of the intestine. Recent studies have shown marked changes from time to time in the serologic types of coliforms that inhabit the intestinal tract.[6] In patients with inlying catheters, interference with normal drainage may allow bacteria to pass through the lymphatic system from the intestine to the urinary tract. A study of the serologic types and antibiotic sensitivity patterns of coliform bacteria in the intestinal flora of hospitalized patients may well yield important information. A third possibility, probably the most likely of all, is that objects with which the patient comes into close contact, particularly mattresses and blankets, are heavily contaminated with resistant coliforms. The bacteria may then cover the patient's skin and the indwelling catheter and may gain access to the bladder when the catheter is irrigated. We have recently demonstrated that blankets and mattresses throughout the hospital are contaminated with antibiotic-resistant micrococci, and attempts to culture coliforms are now in progress.

As was true at the time of our earlier study,[4] members of the Achromobacter group were isolated from more than 10% of all positive urine cultures. This antibiotic-resistant gram-negative rod was also present almost exclusively in the urines of patients with indwelling catheters. The source and mode of spread of this organism is presumably similar to that of the antibiotic-resistant coliform bacteria.

To our knowledge, data similar to those obtained in the present study have not been previously published in the United States. It seems highly likely, however, that the phenomenon of hospital-acquired infections with antibiotic-resistant coliforms is widespread but is largely unrecognized. Failure to recognize the problem probably results from the fact that interest in urinary tract infections is focused chiefly on patients with acute infections acquired prior to admission to the hospital. In contrast, the present study started with organisms isolated in the laboratory and proceeded to an analysis of factors leading to infection of the individual patient. This approach automatically included patients, many of them relatively asymptomatic, who developed signs of infection only after they had been in the hospital for some time. The probability that the phenomenon is widespread is indicated by recent reports from other hospital laboratories, showing that one-third or more of the coliform bacteria isolated were antibiotic-resistant.[5] In some instances, coliforms resistant to several antibiotics are undoubtedly present in individual patients as a result of therapy with a variety of chemotherapeutic agents. As pointed out by Finland,[1] however, except with streptomycin, this has not often been observed to occur. It seems much more likely that in other hospitals, as in ours, future studies will indicate that in the majority of instances infections with resistant coliform bacteria are hospital-acquired. A rational approach to control measures will have to await a better understanding of the manner in which these infections are acquired.

The problem of nosocomial infections of the urinary tract is receiving increasing attention, and the subject has been recently summarized by Kass.[7] Particularly noteworthy are the studies of Orskov[8] in Copenhagen, who found a strikingly uniform distribution of Klebsiella strains cultured from the urines of patients on male surgical wards. Cross infection, probably related to catheterization, was considered the most likely explanation. Garrod and co-workers[9] in England found that almost 20% of women who had recently been catheterized had infections with enterococci, while only 2% of those not catheterized had similar infections. It is evident from these observations, and those described in the present report, that hospital-acquired infections of the urinary tract are an important and challenging problem. As with micrococci, the emergence of coliform bacteria resistant to most of the commonly used chemotherapeutic agents aggravates the situation and will undoubtedly make control measures difficult.

Summary and Conclusions

From one-fifth to two-thirds of the coliform bacteria isolated in the bacteriology laboratory at the King County Hospital at various intervals during the past two years have been found to be antibiotic-resistant. Study of the patients from whom they were isolated revealed that in most instances the resistant bacteria were acquired in the hospital, chiefly in association with instrumentation of the urinary tract. The source of the resistant coliforms and the exact mode of infection remain unexplained. Contamination of catheters and irrigating solutions could not be demonstrated. As with micrococci (staphylococci), the evidence suggests that resistant coliforms are widespread in the hospital environment and are available to cause infections when opportunities present themselves. Reports of a similar incidence of antibiotic-resistant coliforms from other laboratories indicate that this problem is probably present in many hospitals but is largely unrecognized.

References

1. Finland, M.: Medical Progress: Emergence of Antibiotic-Resistant Bacteria, New England J. Med. **253**: 1019-1028 (Dec. 8) 1955.

2. Kenney, M.; Johnson, P. M., and Tatz, J. S.: Four Year Study of Bacterial Sensitivity to Five Antibiotics Using Standardized Paper-Disk Method, Antibiotics & Chemother. **3**: 1221-1234 (Dec.) 1953. Schneierson, S. S.: Changes in Bacterial Sensitivity to Aureomycin and Chloramphenicol in Course of Past Three Years, J. Lab. & Clin. Med. **40**: 48-57 (July) 1952.

3. Weil, A. J., and Stempel, B.: Resistance to Antibiotics Among Microorganisms Isolated in General Hospital in 1953 and 1954, Antibiotic Med. **1**: 319-326 (June) 1955.

4. Kirby, W. M. M.; Waddington, W. S., and Doornink, G. M.: Occurrence of Antibiotic-Resistant Gram-Negative Bacilli in Urinary Tract Infections, in Antibiotics Annual, 1953-54, Welch, H., and Martí-Ibañez, F., editors, New York, Medical Encyclopedia, 1954, p. 285.

5. Footnotes 2 and 3.

6. Powers, D., and Baker, E. E.: Serologic Relationships of Escherichia Coli Isolated Before and After Treatment with Chlortetracycline, Antibiotic Med. **1**: 570-576 (Oct.) 1955.

7. Kass, E. H.: Symposium on Newer Aspects of Antibiotics: Chemotherapeutic and Antibiotic Drugs in Management of Infections of Urinary Tract. Am. J. Med. **18**: 764-781 (May) 1955.

8. Orskov, I.: Nosocomial Infections with Klebsiella in Lesions of Urinary Tract, Acta path. et microbiol. scandinav., supp. 93, pp. 259-271, 1952.

9. Garrod, L. P.; Shooter, R. A., and Curwen, M. P.: Results of Chemotherapy in Urinary Infections, Brit. M. J. **2**: 1003-1008 (Oct. 30) 1954.

PULMONARY CONGESTION AND EDEMA IN UREMIA

Skottowe W. DePass, M.D., Joseph Stein, M.D., Maxwell H. Poppel, M.D.
and
Harold G. Jacobson, M.D., New York

• *Roentgenograms of the chest in cases of so-called pulmonary azotemia, uremic lung, and uremic pneumonia show bilaterally symmetrical densities in the central lung fields with comparatively clear peripheral zones. The latter have been assumed, in the past, to be characteristic of the lung in uremia and to be absent when pulmonary congestion and edema arise from other causes.*

Study of roentgenograms previously published by others and of roentgenograms from a group of six original cases showed that the value of the clear peripheral zones as diagnostic criteria must be doubted; they were not always distinct in cases of uremia and were sometimes present when the primary disturbance was not renal but cardiovascular.

The roentgenographic appearances in question, therefore, should be interpreted simply as representing pulmonary congestion and edema due to fluid retention from whatever cause and should not be considered as diagnostic of nitrogen retention caused by renal failure.

It is the purpose of this study to deny the existence of the roentgenographic entity known as "pulmonary azotemia," "uremic lung," or "uremic pneumonia." It has been our observation that this so-called characteristic picture in patients with uremia actually represents pulmonary congestion and edema following fluid retention either on a cardiac or on a renal basis. The pulmonary changes seen are not related to azotemia, and identical changes can occur on a purely cardiac basis.

This pulmonary roentgenographic picture that occurs in patients with uremia has been described in the past and called variously pulmonary azotemia, uremic lung, or uremic pneumonia. In view of what is now known regarding the etiology of these roentgenographic findings, it would seem desirable to discard these terms. Alwall, Lunderquist, and Olsson [1] have suggested the term "fluid lung," since they consider fluid retention the basic factor in the changes seen.

The pulmonary roentgenographic findings in uremia that have been described consist of bilateral symmetrical densities in the central lung fields. The characteristic feature is the presence of a comparatively clear peripheral zone in both pulmonary fields. Most writers have admitted that, except for this peripheral zone of clearing, the findings are consistent with those of pulmonary congestion and edema.

Survey of the Literature

Roubier and Plauchu [2] in 1934 reported changes that were designated as uremic edema in the chest roentgenograms of four patients with uremia. Rendich, Levy, and Cove [3] in 1941 concluded that a positive diagnosis of pulmonary azotemia could be made from a roentgenogram of the chest. They considered the relationship of this picture to cardiorenal disease and nitrogenous retention as constant. However, they noted that this picture was rare and that there was no correlation with the level of blood urea. In 50 patients with elevated blood urea levels, roentgenograms did not show any pulmonary manifestations of uremia. These were all patients without clinical evidence of heart failure. It should be noted that all the patients reported in this study as showing the typical roentgenographic picture had clinical histories consistent with congestive heart failure. Doniach [4] in 1947 investigated four of five cases histologically. He also noted that the distribution of edema fluid in these cases was similar to that in uncomplicated acute left ventricular failure. His five cases all had clinical findings consistent with heart failure. The patients autopsied showed in the lungs widespread solid edema due to a fibrinous or albuminous intra-alveolar exudate. This was associated with a mononuclear cell reaction and organization with hyalin membranes lining the alveolar ducts. He considered this the result of a combination of a rise in pulmonary capillary pressure due to left ventricular failure and an alteration in capillary permeability resulting from the uremia. Barden and Cooper [5] in 1948 stated also that increased vascular permeability played a role in this condition. No definite evidence was offered to support this view. Bass and Singer [6] in 1952 reported five cases, all of which had clinical findings consistent with congestive heart failure. They considered the clinical findings in some of their cases less marked than would be expected from the roentgenographic picture. It was noted that the shadows gradually disappeared as the left ventricular failure was alleviated. Gould and Torrance [7] concluded that there was some correlation between the massive central type of edema and uremia. They included 10 "pure uremic" cases in their 100 cases of pulmonary edema. However, the case histories were not given.

Alwall, Lunderquist, and Olsson's [1] excellent work in 1953 reported 16 cases of uremia in which the chest roentgenograms revealed the so-called typical changes. They assumed that liquid retention constituted the fundamental etiological factor. In their series of patients they reduced fluid supply and produced diarrhea by means of hypertonic sodium sulfate solution either per os or as an enema. The body weight

Resident (Dr. DePass), Chief (Dr. Stein), and Consultant (Dr. Poppel), Department of Radiology, Veterans Administration Hospital; Assistant Clinical Professor of Radiology (Dr. Stein), Professor and Chairman of Radiology (Dr. Poppel), and Clinical Professor of Radiology (Dr. Jacobson), New York University College of Medicine; and Director of Radiology, Montefiore Hospital (Dr. Jacobson).

in all patients was reduced owing to the loss of fluid. There was a marked parallelism between the reduction in the body weight and the regression of the roentgenologic changes, but no relationship was noted to the nonprotein nitrogen or bicarbonate values. These remained the same or rose after the removal of the excess fluid. The significance of fluid retention as an etiological factor was also elucidated by ligating the ureters of rabbits and subsequently giving intravenous infusions. Changes similar to those of the uremic lung in human beings appeared on chest roentgenograms. After ultrafiltration treatment, the chest roentgenograms were normalized and remained normal in spite of uremia progressing to death. They concluded that it would seem justifiable to reckon fluid retention as a basic factor in the changes seen on the chest roentgenogram. They stated that for practical purposes it would seem preferable to speak of fluid lung rather than of uremic lung, since the former gives an indication as to appropriate therapy.

In reviewing the writing on this subject it is of interest that, in examining the roentgenograms used

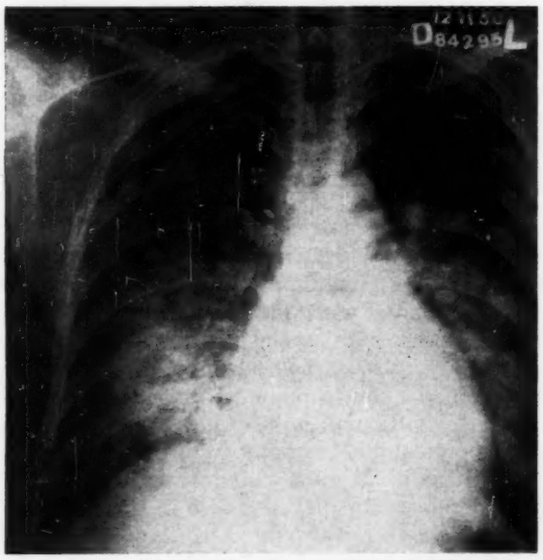


Fig. 1.—Roentgenogram of chest of patient in case 1; patient was in congestive failure at this time. Note clear periphery.

as illustrations of this condition, many of those presented as typical do not actually present a peripheral zone of clearing. A great many show grossly enlarged hearts and appear to be quite consistent with a diagnosis of pulmonary congestion and edema.

Report of Cases

The six illustrative cases summarized here were selected from the radiology museum of the Veterans Administration Hospital on the basis of chest roentgenograms that showed the so-called typical changes previously described in the literature.

Case 1.—A 27-year-old male was admitted on Dec. 7, 1950, with a history of chronic glomerulonephritis. He entered complaining of polyuria and headaches. Physical examination revealed venous distention in the neck. However, the lungs were clear on physical examination. The blood pressure was 230/150 mm. Hg. The hemoglobin level equaled 6.8 gm. per 100 cc. The urine showed 4+ protein with numerous red blood cells and white blood cells. The blood urea nitrogen level was 90 mg. per 100 cc. He was unable to retain fluids given orally, and it was necessary to give fluids intravenously. His urinary output was extremely low. He was receiving fluids intravenously on

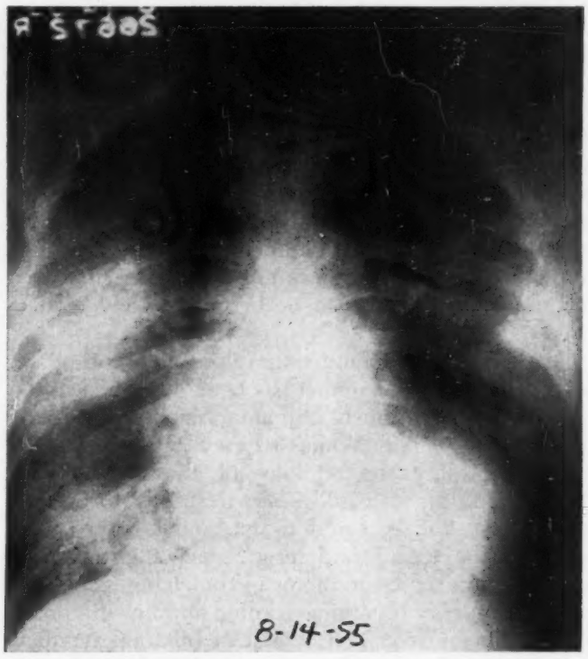


Fig. 2.—Anteroposterior roentgenogram of chest of patient in case 2. He was in congestive heart failure with a respiratory rate of 40 per minute at this time. The chest film cleared after digitalization.

the day the chest roentgenogram shown in figure 1 was taken. At this time, his respiratory rate was 28 per minute with severe hiccups. At autopsy two days later the lungs showed pulmonary edema. The right lower lung showed some fibrin and a few

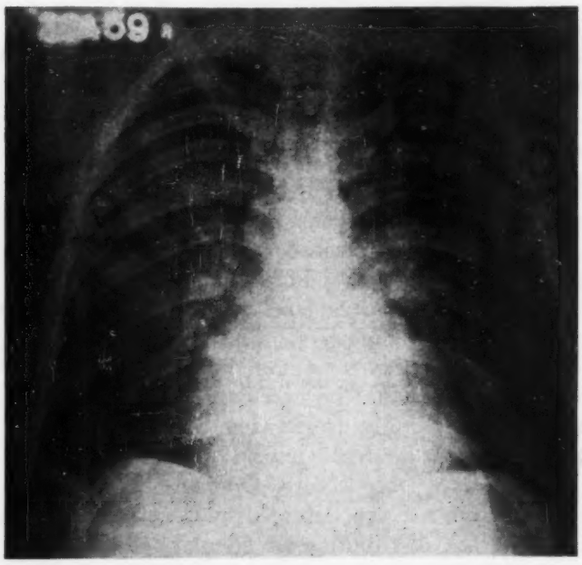


Fig. 3.—Roentgenogram of patient in case 3, showing hilar congestion with clear peripheral zone.

polymorphonuclear cells admixed, indicating an early pneumonia at this site. Autopsy confirmed the clinical diagnosis of chronic glomerulonephritis.

Case 2.—A 50-year-old male entered the Veterans Administration Hospital on Aug. 10, 1955, with a two-day history of

malaise, fever, chills, and cough. He had a history of hypertension and exertional dyspnea. On admission his temperature was 102.2 F (39 C), his pulse was 134 per minute, and his respiratory rate was 32 per minute. His blood pressure was 220/120 mm. Hg. On physical examination, rales were heard over the lower left lung field. The white blood cell count was 16,000 per cubic millimeter. The urinalysis showed 2+ protein with white blood cells and casts. The specific gravity remained fixed at 1.010. His cough was productive of purulent sputum. The blood urea nitrogen level was 42 mg. per 100 cc. Diagnosis of bronchopneumonia was made, and he was started on therapy with penicillin. Tetracycline (Achromycin) was added to the therapeutic regimen two days later. The dyspnea continued, and he developed a gallop rhythm three days after admission. The sputum became frothy and less purulent. On Aug. 14, 1955, when the chest roentgenogram shown in figure 2 was taken, his respiratory rate was 40 per minute. He was also receiving fluids intravenously on this day. His electrocardiogram revealed left ventricular strain. Digitalization and a low-salt diet were instituted. His blood urea nitrogen level rose to 92 mg. per 100 cc. on Aug. 15, 1955. A transient friction rub was heard at one time. His pulse rate and blood urea nitrogen level fell to normal after digitalization, and his respiratory distress was relieved. His chest

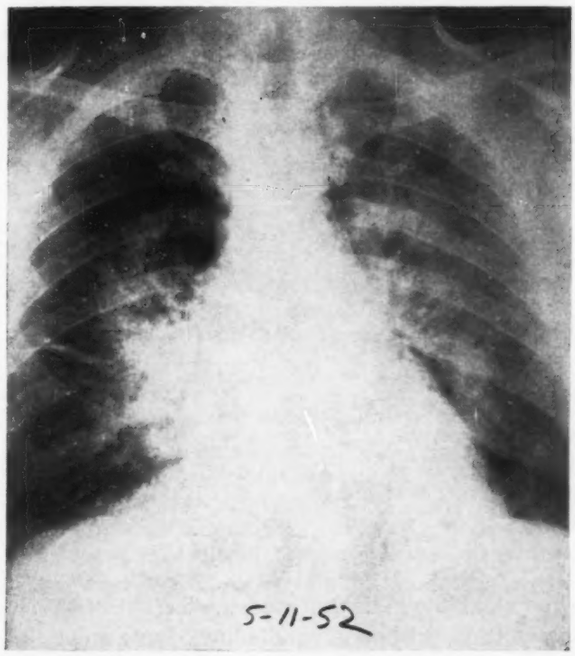


Fig. 4.—"Typical" roentgenogram of chest of patient in case 4, who had had a diagnosis of acute glomerulonephritis with congestive failure. Clearing followed digitalization.

roentgenogram showed marked clearing. It was felt clinically that the patient had entered with bronchopneumonia and chronic glomerulonephritis and that congestive heart failure had developed.

Case 3.—A 24-year-old male was admitted on May 17, 1947, with chills and fever. His blood pressure was 175/40 mm. Hg, with a pulse rate of 120 per minute. An aortic systolic murmur was heard. His urine was clear. He was started on penicillin therapy. On May 29, 1947, he developed dyspnea and rales in his chest were heard. An electrocardiogram was consistent with myocarditis. He was digitalized; however, his course was progressively downhill. His blood urea nitrogen level rose from 99 mg. per 100 cc. on June 9, 1947, to 150 mg. per 100 cc. on June 20, 1947. On June 16, 1947, when the chest roentgenogram shown in figure 3 was taken, his respiratory rate was 40 per minute. He was receiving fluids intravenously on this day. At autopsy on June 24, 1947, endocarditis and aortic valvulitis were found. Pulmonary edema with some interstitial pneumonitis was present. The kidneys showed the changes of acute glomerulonephritis.

Case 4.—A 39-year-old male entered the hospital on May 11, 1952, because of exertional dyspnea and varicose ulcers. He also

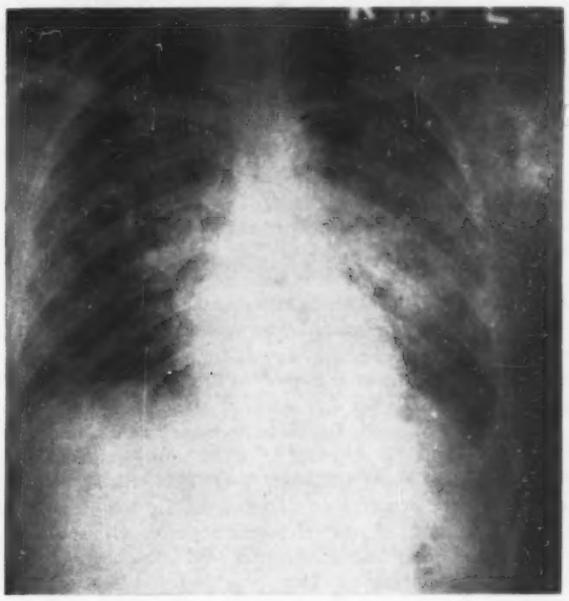


Fig. 5.—Roentgenogram of patient in case 5, showing "butterfly" densities with clear peripheral zone. The chest cleared after treatment for cardiac failure.

had a sanguinous discharge from the right ear that proved to be otitis media. Physical examination revealed marked dyspnea, but a clear chest was present. However, the admission chest roentgenogram showed marked changes (fig. 4). The respira-

Fig. 6.—Roentgenogram of patient in case 6 in congestive heart failure with elevated respiratory rate. These changes occurred with no evidence of azotemia or renal disease. Chest films were normal after digitalization.

tory rate was 28 per minute, the pulse was 120 per minute, and the blood pressure was 150/90 mm. Hg. The urine showed a specific gravity of 1.014 with 4+ protein. Microscopic examination revealed red and white blood cells with hyaline and granular

casts. The blood urea nitrogen level was normal. The dyspnea increased; distended neck veins were noted; and peripheral edema developed after admission. The dyspnea was relieved when the patient was digitalized and given diuretics. His weight dropped 23 lb. (10.4 kg.) within a week of digitalization. The chest roentgenogram cleared. The urine cleared, and a normal Addis count was present on discharge. The final diagnosis was acute glomerulonephritis with secondary hypertension and congestive failure.

CASE 5.—A 33-year-old male entered the hospital on April 18, 1952, with a three-week history of cough and a one-week history of exertional dyspnea and orthopnea. He appeared acutely ill. His temperature was 102 F (38.9 C), his pulse was 102 per minute, and his blood pressure was 138/80 mm. Hg. The respiratory rate was 40 per minute. Distended neck veins were present. Moist rales were present, and a gallop rhythm was noted. Peripheral edema was present. The urine showed 4+ protein, many white blood cells, and a few red blood cells. The blood urea nitrogen level remained normal. The venous pressure was 130 mm. H_2O. Marked changes were seen on the admission chest roentgenogram (fig. 5). He was digitalized, given oxygen, and placed on antibiotic therapy. He developed a pleuropericardial friction rub. After digitalization he responded well, and his dyspnea was relieved. His chest roentgenogram cleared. He was afebrile within 48 hours. Serial electrocardiograms showed changes consistent with pericarditis. Red blood cells in the urine increased in number and then disappeared. He was discharged with a final diagnosis of acute glomerulonephritis with secondary congestive failure as well as superimposed bronchopneumonia. The patient was well one year later.

CASE 6.—A 35-year-old male was admitted on Nov. 25, 1955, complaining of dyspnea and episodes of hemoptysis for six days. He had had recent ankle edema and gave a history of rheumatic fever. His temperature was 101 F (38.3 C), his pulse rate was 120 per minute and irregular, and his blood pressure was 130/100 mm. Hg. His urinalysis showed 1+ protein. His blood urea nitrogen level was normal. No rales were heard on admission, but marked changes were seen on his chest roentgenogram (fig. 6). At this time his respiratory rate was 40 per minute. His venous pressure was elevated. After digitalization his symptoms were relieved, and his chest roentgenogram cleared. His urine became clear. The diagnosis was that of congestive failure on the basis of rheumatic heart disease with mitral stenosis and insufficiency. No evidence of renal disease was found.

Comment

Only three of these patients had uremia, but, as can be seen, all had symptoms consistent with congestive heart failure. There was clinical evidence of increased fluid volume in each case. The so-called typical uremic picture can occur on a cardiac basis without evidence of renal disease, as is demonstrated by case 6. It should be noted also that four of the patients showed some evidence of coexistent pneumonia. The frequent coexistence of cardiorenal pulmonary edema with superimposed infection is well known.[8] In one case, the pneumonia apparently preceded any evidence of clinical heart failure (case 2). The fact that excessive intravenous administration of fluids may be an important factor in the development of pulmonary edema has frequently been pointed out.[9]

The clear peripheral area was present on a chest roentgenogram taken during the course of each patient's illness. The explanation for the clear periphery has best been postulated by Dock.[10] He compared the lung to a fan that opens and closes about a relatively stationary hilus. In the central portion of the lung, the respiratory excursions are brief and stasis is greater. The edema fluid appears first in the inner zone where motion is slight compared to the periphery. It has been shown that a quiescent lung produces almost no lymph from the large collecting trunks. The lymph channels of the peripheral portions of the lung drain outward, and increased respiratory motion should aid drainage of these areas. Dock[10] suggested that acidosis and air hunger in these patients played the primary role. The elevated respiratory rates in the patients described at the time of the illustrated chest roentgenograms should be noted (see table).

The close association between glomerulonephritis with severe hypertension and cardiac failure has been described.[8] The frequency of heart failure in patients with acute glomerulonephritis is sometimes not appreciated. The question of the role of increased capillary permeability in nephritic edema has not been definitely settled. Fishberg[8] and others have suggested that augmented capillary permeability occurs due to the altered chemical composition of the blood in uremia. It should be noted that two of our patients who showed evidence of renal damage and fluid retention did not at any time have an elevated blood urea nitrogen level or other evidence of azotemia (cases 4 and 5). Only in those instances in which the edema fluid contains considerable amounts of protein are we justified in considering that increased capillary permeability plays a significant part in the genesis of the edema.[8] Warren and Stead[11] observed in patients with acute glomerulonephritis that the subcutaneous edema fluid contained levels of protein that were not elevated and were similar to levels that they observed in cardiac edema. They considered the cause of edema in acute nephritis to be water and salt retention secondary to a disturbance in renal function and not the

Summary of Clinical Data on Six Patients with Chest Roentgenograms Showing "Uremic Lung"

	Case No.					
	1	2	3	4	5	6
Clinical diagnoses						
Glomerulonephritis	+*	+	+*	+	+	0
Uremia (blood urea nitrogen)	+	+	+	0	0	0
	90 mg. per 100 cc.	92 mg. per 100 cc.	150 mg. per 100 cc.	Normal	Normal	Normal
Pulmonary congestion and edema	+*	+	+*	+	+	+
Pneumonia	+*	+	+*	+	+	0
Hypertension	+	+	+	?	0	0
Rheumatic heart disease	0	0	?	0	0	+
Roentgenographic picture of "uremic lung"	+	+	+	+	+	+
Clinical evidence of fluid retention	+	+	+	+	+	+
Receiving fluids intravenously on day of "typical x-ray"	+	+	+	0	0	0
Respiratory rate at time of "typical x-ray"	28†	40	40	28	40	40
Clearing of lungs by x-ray after treatment for cardiac failure	Died	+	Died	+	+	+

* Confirmed at autopsy.
† Severe spasms of the diaphragm.

result of diffuse capillary damage throughout the body. It would seem unlikely that the lung capillaries are selectively damaged. Peters [12] considered congestive failure to be the chief disorder responsible for edema in nephritis.

We believe that the primary cause of the changes seen in the chest roentgenograms of the patients with renal disease presented here appears to be water and salt retention as the result of the disturbance of renal function. The development of cardiac failure probably following hypervolemia, superimposed pulmonary infections, and elevated respiratory rate all play roles in the formation of the picture. The same roentgenographic changes can be produced by primary cardiac decompensation without renal disease. There is no such roentgenographic entity as a pure uremic lung.

Conclusions

We urge the abandonment of the terms "pulmonary azotemia," "uremic lung," or "uremic pneumonia" to describe changes seen in chest roentgenograms of patients with renal disease. The roentgenographic findings described represent, primarily, pulmonary congestion and edema. Fluid retention, varying degrees of cardiac failure, and often a superimposed pulmonary infection, as well as an increased respiratory rate, all enter into the formation of this picture. The six cases that are presented illustrate that there is no such roentgenographic entity as a "pure uremic lung."

130 W. Kingsbridge Rd., Bronx 6 (Dr. Stein).

References

1. Alwall, N.; Lunderquist, A., and Olsson, O.: Studies on Electrolyte-Fluid Retention: I. Uremic Lung—Fluid Lung? On Pathogenesis and Therapy, Acta med. scandinav. **146**: 157-163, 1953.

2. Roubier, C., and Plauchu, M.: Sur certains aspects radiographiques de l'oedème pulmonaire chez les cardio-rénaux azotémiques, Arch. méd.-chir. de l'app. respir. **9**: 189-200, 1934.

3. Rendich, R. A.; Levy, A. H., and Cove, A. M.: Pulmonary Manifestations of Azotemia, Am. J. Roentgenol. **46**: 802-808 (Dec.) 1941.

4. Doniach, I.: Uremic Edema of Lungs, Am. J. Roentgenol. **58**: 620-628 (Nov.) 1947.

5. Barden, R. P., and Cooper, D. A.: Roentgen Appearance of Chest in Diseases Affecting Peripheral Vascular System of Lungs: Conditions Associated with Increased Vascular Permeability, Radiology **51**: 44-57 (July) 1948.

6. Bass, H. E., and Singer, E.: Pulmonary Changes in Uremia, J.A.M.A. **144**: 819-823 (Nov. 4) 1950.

7. Gould, D. M., and Torrance, D. J.: Pulmonary Edema, Am. J. Roentgenol. **73**: 366-374 (March) 1955.

8. Fishberg, A. M.: Hypertension and Nephritis, ed. 5, Philadelphia, Lea & Febiger, 1954.

9. Nessa, C. B., and Rigler, L. G.: Roentgenological Manifestations of Pulmonary Edema, Radiology **37**: 35-46 (July) 1941.

10. Dock, W.: Evil Sequelae of Complete Bed Rest, J.A.M.A. **125**: 1083-1085 (Aug. 19) 1944.

11. Warren, J. V., and Stead, E. A.: Protein Content of Edema Fluid in Patients with Acute Glomerulonephritis, Am. J. M. Sc. **208**: 618-622 (Nov.) 1944.

12. Peters, J. P.: Edema of Acute Nephritis, Am. J. Med. **14**: 448-458 (April) 1953.

USE OF THE C-REACTIVE PROTEIN TEST AS A SCREENING PROCEDURE FOR BLOOD DONORS

Edwin M. Knights Jr., M.D., Merrill Hutchins, Sc.B., Eugene Morgan, Sc.B.
and
Jaan Ploompuu, Sc.B., Detroit

• *The C-reactive protein test, performed by a capillary precipitin method with the use of commercially available antiserum, was applied to 3,543 blood donors and 633 patients in 37 different disease categories. The distribution of positive reactions failed to reveal any possibilities of the test as a screening method for the detection of any one condition in mass surveys. It was not of value of detecting carriers of homologous serum jaundice or in predicting minor transfusion reactions. Patients who experienced chills after transfusions developed a positive C-reactive protein test. Serums initially negative became positive after refrigeration and storage. The test represents a type of immune reaction but is unstable and nonspecific.*

C-reactive or "acute phase" protein, which was first reported in the serums of patients with lobar pneumonia by Tillet and Francis [1] in 1930, has come into increasingly wide usage as a diagnostic tool since its isolation and identification by MacLeod and Avery [2] in 1941. The protein was originally recognized in the precipitate form when the C-polysaccharide of pneumococcus was added to the serums of patients ill with acute lobar pneumonia. Later, by injecting the purified protein into rabbits, MacLeod and Avery were able to develop an antiserum reputedly superior to the original C-polysaccharide. Wood, McCarty, and Slater [3] have been able to crystallize the protein out of lipid-containing fluids.

Although no great degree of specificity has been claimed for the C-reactive protein test, it has been described as a "non-specific but sensitive indicator of inflammation, of infectious or non-infectious origin." [4] It is relatively simple to perform and fairly easy to read if one does not attempt to make a quantitative determination out of it. Clinically, the C-reactive protein test has been most widely used in the evaluation of rheumatic fever, where it is considered most valuable in afebrile patients in whom carditis is a major feature. Good [5] summarized the advantages of the test over determination of the sedimentation rate for use in diagnosis of rheumatic fever in 1951, pointing out that there is no equivocal zone of values between normal and abnormal, that formation of C-reactive protein is not depressed by heart failure, that C-reactive protein is immunologically distinct from other serum protein, that concentration of the protein reflects roughly the degree of rheumatic activity, and that it may be absent from the serum in other conditions encountered in the differential diagnosis of rheumatic fever.

From the Department of Pathology, Harper Hospital.

Attempts have also been made, although not on so great a scale, to assess the value of this test in other disease states. The possibility of its use in early diagnosis of myocardial infarction was suggested by Kroop and Shackman,[4] and the finding of a high percentage of positive tests in cases of cancer, tuberculosis, and rheumatoid arthritis has also been reported.[6] The apparent absence of C-reactive protein in the serums of 90 patients with active viral hepatitis was reported by Havens, Eichman, and Knowlton.[7]

Materials and Methods

In the present investigation, an attempt was made to evaluate the C-reactive protein test as a screening procedure for blood donors and as a basis of predicting so-called minor nonhemolytic transfusion reactions in recipients of blood. C-reactive protein determinations were performed by the capillary precipitin method devised by Anderson and McCarty,[8] with use of commercially available antiserum. Records were kept to ascertain whether positive C-reactive protein tests could be correlated with the sources of supply. Also under consideration was the possibility that the test might give some indication of the carrier state of serum hepatitis, particularly as the thymol turbidity and other liver function tests are not infallible as screening procedures. In addition, further studies were carried out investigating the nature and possible causes of false-positive C-reactive protein tests, together with incubation, bacterial inoculation, refrigeration, and Tiselius electrophoresis studies.

To accomplish these objectives, the C-reactive protein test was performed on the serums of all donors used by the David C. Whitney Memorial Blood Bank of Harper Hospital over a six-month period. Patients were followed to detect any changes in their C-reactive protein tests after receiving transfusions. The routine investigation of all transfusion reactions was augmented by a personal follow-up by one of us, and every effort was made to insure prompt and accurate reporting of any possible reactions. Criteria for minor reactions were shaking chills; urticaria, with or without an elevation of temperature; and the absence of hemolysis. A control series was run on patients with negative C-reactive protein tests who were receiving negatively testing bloods. It was usually necessary to exclude from the survey patients receiving multiple transfusions. All blood samples of recipients that had been received for typing and cross matching were placed in a deep freeze as soon as possible for retention for a period of at least six months.

Reading of the test was limited to two individuals on the investigative team. It was felt that there was probably little to be gained from making any attempt at quantitative evaluation, so, for the purpose of the studies, the test was reported as either positive or negative. In setting up the test it was found expedient to leave a small air bubble at the lower end of the capillary tube to prevent possible false-positive reactions that seem to arise from the plastic material at the base.

Findings

Early in the study it became apparent that the high percentage of positive tests among the patients to be studied represented a wide variety of disease states. A list of patients in whom the positive C-reactive protein tests were obtained is given in table 1. For the sake of completeness, this table also includes patients who did not receive transfusions but on whom the C-reactive protein tests were performed on admission or when ordered, as a diagnostic procedure. Follow-up of patients in whom results were negative revealed that many of their tests became positive while the patients were in the hospital. In a random sampling of 50 patients in whom the C-reactive protein test became positive, this occurred after surgery with transfusion in 28, after surgery without transfusion in 12, after parturition (no transfusion) in 7, and after transfusion alone in 3.

TABLE 1.—*Results of C-Reactive Protein Tests in Patients with Various Types of Diseases**

Diagnosis	Positive	Negative	Total
Rheumatic fever	18	10	28
Rheumatic heart disease	9	8	17
Rheumatoid arthritis	4	1	5
Congenital heart disease	0	7	7
Chronic valvular cardiac disease	0	6	6
Malignant tumors	24	29	53
Benign tumors	9	64	73
Brain tumors	0	4	4
Lymphatic leukemia	0	5	5
Bronchial asthma, bronchitis, bronchiectasis	5	6	11
Chronic and acute upper respiratory infection, sinusitis	5	6	11
Pneumonia	5	2	7
Appendicitis, acute	1	5	6
Tonsillitis, chronic	8	25	33
Nonmalignant gastrointestinal tract disease	5	13	18
Endometriosis, adenomyosis	0	13	13
Tuberculosis	2	3	5
Syphilis	2	1	3
Other acute and chronic inflammatory conditions	22	51	73
Traumatic conditions (fractures, sprains, etc.)	7	18	25
Pregnancy, ante partum	0	11	11
Pregnancy, post partum	87	5	92
Ruptured tubal pregnancy	1	0	1
Cataracts, preoperative	10	13	23
Simple hernias, preoperative	6	21	27
Varicosities, preoperative	2	8	10
Hemorrhoids, preoperative	1	8	9
Glaucoma, preoperative	2	2	4
Hemophilia	1	2	3
Lupus erythematosus	1	1	2
Diabetes mellitus	2	10	12
Angina pectoris	1	0	1
Cirrhosis	1	2	3
Cholecystitis, chronic	2	10	12
Thyroid colloid goiter	1	6	7
Adenomas (thyroid)	2	8	10
Hyperthyroidism	0	3	3

* Included are patients who received transfusions and patients who did not receive transfusions but had tests performed on admission or as diagnostic procedure.

Of the donors' bloods tested, 1,770 were drawn in the David C. Whitney Memorial Blood Bank from voluntary donors provided by the patients and from the bank's professional donor list. Of 3,543 bloods tested, 425 (12%) gave a positive C-reactive protein test; of these 425, 168 (approximately 40%) were in bloods drawn in the David C. Whitney Memorial Blood Bank and 257 (approximately 60%) were in bloods received from other metropolitan sources.

In a total of 100 C-reactive protein–negative tests in patients receiving blood transfusions, 29 became positive on the first day after transfusion. Seventy-seven had become positive by the fifth day after transfusion. These were divided as follows: 1. Eighty-three patients having negative C-reactive protein tests received negative bloods. By the first day after transfusion, 24 tests had become positive. By the third day after transfusion, 10 additional, or a total of 34, tests had become positive, and, by the fifth post-transfusion day, a total of 65 had become positive. 2. Seventeen patients having negative C-reactive protein tests received positive blood. By the first day after transfusion, 5 tests became positive; by the third day, 7 had become positive; and, by five days, 12 had become positive.

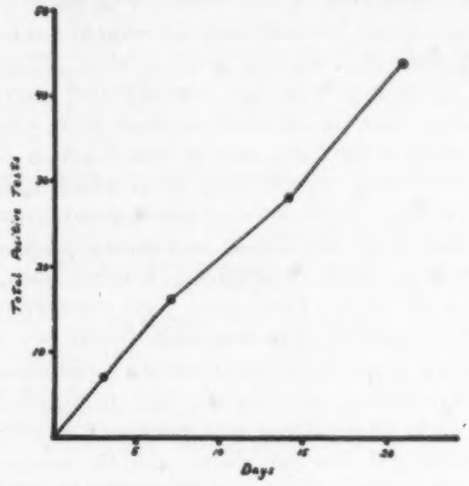
None of the above patients had major or minor transfusion reactions during this period. Twenty-two patients with C-reactive protein–negative tests had minor transfusion reactions, as evidenced by the criteria listed above. By the first day no tests were C-reactive protein–positive; by five days 16 were C-reactive protein–positive; and by eight days 18 were positive. In four patients, tests remained negative throughout this period; in none of these four were chills observed.

It was not too surprising that we were unable to establish any correlation between the positive C-reactive protein test and a carrier state of serum hepatitis, particularly after the report of Havens, Eichman, and Knowlton.[7] Five cases of homologous serum jaundice developed during the span of this survey. In four of these cases, patients had received 2 pt. (1,000 cc.) of blood each. Thanks to excellent cooperation from many individuals, serum was obtained from each of the donors concerned. In all eight donors, the liver function studies performed (thymol turbidity, icterus index, and cephalin flocculation) were within normal limits, but one donor from each case did have a positive C-reactive protein test. A fifth patient developed hepatitis after receiving blood testing negatively to the C-reactive protein antiserum.

The instability of this serologic examination became quite apparent during this research work and necessitated discarding large quantities of data. It was found that negatively reacting serums would become positive under several varieties of conditions. These are summarized below.

Retesting After Storage in Deep Freeze.—A group of 120 serums that had been negative and were subsequently stored in deep freeze at 15 C were retested in groups of 20 at various intervals. After 2 weeks, 16 had turned positive; after 4 weeks, one more; after 6 weeks, 10 more; after 8 weeks, 7 more; after 10 weeks, 7 more; and, after 12 weeks, 8 more. Bacteriological studies on these serums showed them to contain a multiplicity of organisms. Most commonly encountered were Aerobacter aerogenes, Streptococcus viridans, and Pseudomonas aeruginosa. Also encountered were diphtheroids, bacterioids, Micrococcus (Staphylococcus) pyogenes var. albus, and Escherichia coli.

Retesting After Storage in Refrigerator.—Another study was made to determine how long the serums could be kept in the refrigerator at 4 to 6 C. Fifty negative serums were placed in the blood bank refrigerator. Accurate records of the temperature were kept



Effect of prolonged refrigeration on 50 serums negative for C-reactive protein kept at 4 to 6 C. The number turning positive at 3, 7, 14, and 21 days are recorded above.

by means of a recording thermometer. These serums were tested at intervals, and the results are shown in the figure. Here again a large percentage of tests became positive. Bacterial contamination was again found with organisms similar to those described above. In addition, Proteus vulgaris was also observed.

TABLE 2.—*Effect of Bacterial Inoculation on the C-Reactive Protein Test*

Case	Serums	Days 1	3	7	14	21
1	Sterile serum	—	—	—	+	+
	A. aerogenes	—	—	+	+	+
	Ps. aeruginosa	—	—	—	+	+
	Str. viridans	—	—	—	+	+
	Open tube	—	—	—	+	+
2	Sterile serum	—	—	+	+	+
	A. aerogenes	—	+	+	+	+
	Ps. aeruginosa	—	+	+	+	+
	Str. viridans	—	+	+	+	+
	Open tube	—	—	+	+	+
3	Sterile serum	—	—	—	—	+
	A. aerogenes	—	—	+	+	+
	Ps. aeruginosa	—	—	+	+	+
	Str. viridans	—	—	+	+	+
	Open tube	—	—	—	+	+
4	Sterile serum	—	—	—	—	—
	A. aerogenes	—	—	—	+	+
	Ps. aeruginosa	—	—	—	+	+
	Str. viridans	—	—	—	+	+
	Open tube	—	—	—	+	+
5	Sterile serum	—	—	—	+	+
	A. aerogenes	—	+	+	+	+
	Ps. aeruginosa	—	+	+	+	+
	Str. viridans	—	+	+	+	+
	Open tube	—	—	—	+	+

Study of Correlation Between Infecting Organism and Subsequent Positive Test.—In this study an attempt was made to discover if any correlation existed between an infection with a particular organism and a subsequently positive C-reactive protein test. Those

organisms occurring most frequently, A. aerogenes, Ps. aeruginosa, and Str. viridans, were inoculated into sterile serum drawn through Swinny filter adapters. In addition, sterile control studies were run. Results are shown in table 2. As can be seen from the table, control serums did turn positive in spite of remaining bacteriologically negative; however, the organisms used tended to speed up the appearance of a positive C-reactive protein test.

Study of Effect of Inactivating Procedure Used in Serologic Studies.—In another investigation serums for which tests had become positive after refrigeration were studied to discover whether the inactivating procedure used in serologic studies might effect the final result in the C-reactive protein reaction. Twenty positive serums, representing 10 in which tests were positive directly after serum was taken from the patient and 10 in which tests had turned positive after refrigeration, were incubated in a water bath for 30 minutes at 37 C. They were then removed, and a C-reactive protein test was immediately set up. All continued to give positive C-reactive protein results.

Electrophoretic Studies.—In this study, blood was taken from 10 patients giving positive C-reactive protein tests and Tiselius electrophoretic studies were run on the serums of these patients. The Aminco-Stern apparatus was used, with a buffer of pH 8.6. Although various globulin fractions were found to be elevated in different patients, no characteristic pattern was observed.

Comment

It is apparent that the C-reactive protein test is a very nonspecific indication of an abnormal body process, such as acute inflammation or widespread neoplastic disease, although this does not appear to detract appreciably from its usefulness in evaluating the activity of rheumatic fever and possibly other disease states, such as bronchial asthma.

From the ubiquitous nature of acute phase protein in patients with diseases of all varieties, one might well suggest that this test be renamed "the heterophil precipitation test." Table 1 seems to corroborate the findings of Hedlund[9] of the vast varieties of disease stages in which a positive reaction may be expected. Although a positive test was found in many cases of malignant disease, these were, for the most part, far-advanced cases, and it should not be inferred from our data that the test is of value in the early diagnosis of cancer. From our data it would appear that the appearance of C-reactive protein after commissurotomy is of no diagnostic value, as either the surgical procedure or the accompanying blood transfusions would usually be sufficient to account for its presence. As a screening test of blood donors, the results so far leave considerable room for speculation. There is little doubt that it can pick up disease states concealed or unrecognized by the donor, and from this standpoint it shows some promise, particularly as it is a relatively simple test to perform. It would also appear to be a rough indication of the age of the blood stored and possibly of bacterial contamination. It would appear that the test could prove a valuable method of evaluating the state of health of blood donors being utilized in various sources of blood supply. Thirty per cent of recipients had a positive C-reactive protein test prior to transfusion, and therefore these could not be used in the evaluation of the reactions. In contrast, only 12% of donors had positive tests. From all data available we must assume that, if the test has been carefully performed on fresh serum, a positive test reaction is usually indicative of a pathological state existing in the donor.

Are we, therefore, justified in giving this blood to a patient? It would appear that the final decision should be based on the findings of demonstrable changes in the recipient of a serious enough nature to justify screening out an additional 10 to 15% of bloods already collected. If the recipients of blood develop positive tests that can be correlated with transfusion reactions, production of bacteremia, subsequent development of homologous serum jaundice, or development of immune antibodies, the test would appear to be of considerable value. Only the latter, a sensitization of the recipient, seems to be implied by our results. From a clinical standpoint, this sensitization is difficult to evaluate, particularly as in many cases it is undoubtedly modified by the clinician who prescribed antihistaminic substances that may mask, although not necessarily eliminate, the reaction of the transfusion in the recipient. It seems unlikely that the change in the recipient from negative to positive reactions can be attributed solely to the greatly diluted small quantity of protein received in the positively reacting bloods, although it is conceivable that the breakdown of these bloods in the body may contribute to the number of recipients giving a positive reaction. As noted above, many of these patients had received negatively reacting blood. Further support to possible immune response is the fact that the majority of the patients did not have positive reactions within the first 24 hours after transfusion but showed subsequent positive reactions on the third and fifth post-transfusion days. In nine patients who returned three to five weeks later for follow-up studies, four tests remained positive. Every patient who experienced chills after transfusion eventually gave a positive C-reactive protein test.

In our studies we were unable to establish a correlation between the receipt of positive C-reactive protein blood and development of so-called minor reactions and homologous serum jaundice, although it is interesting to note that, in nearly all patients who clinically manifested minor reactions, C-reactive protein tests became positive. Adequate evaluation of this would require a coordinated survey involving several large institutions with active blood banks and very care-

ful follow-up of all patients receiving transfusions. It would also seem desirable to study the effects of chemical blood sterilization on the C-reactive protein reaction in recipients of the blood so sterilized.

Summary

The C-reactive protein test has been studied to evaluate its possible use as a screening procedure for blood donors. In 3,543 donors' bloods tested, 12% gave positive C-reactive protein reactions. No correlation was observed between the receipt of bloods positive for C-reactive protein and development of so-called minor transfusion reactions. The test does not appear to be of value for screening carriers of homologous serum jaundice. The delayed development of a positive C-reactive protein test in patients receiving transfusions of both positively and negatively reacting bloods was observed in many cases. All patients experiencing chills developed a positive C-reactive protein test. This possibly represents a type of immune reaction. The frequency with which positive C-reactive protein tests appear after surgical procedures or blood transfusions renders the test of little use in evaluation of the postcommissurotomy syndrome. The ubiquitous nature of C-reactive protein is reaffirmed by the high percentage of positive tests observed. In addition, the instability of this test and its nonspecificity are pointed out by false-positive reactions occurring after storage in the refrigerator and deep freeze.

3825 Brush St. (1) (Dr. Knights).

References

1. Tillett, W. S., and Francis, T., Jr.: Serological Reactions in Pneumonia with Non-Protein Somatic Fraction of Pneumococcus, J. Exper. Med. **52**: 561-571 (Oct.) 1930.

2. MacLeod, C. M., and Avery, O. T.: Occurrence During Acute Infections of Protein Not Normally Present in Blood: Isolation and Properties of Reactive Protein, J. Exper. Med. **73**: 183-190 (Feb.) 1941.

3. Wood, H. F.; McCarty, M., and Slater, R. J.: Occurrence During Acute Infections of Protein Not Normally Present in Blood: Physical-Chemical Properties of C-Reactive Protein Crystallized by Modified Technique, J. Exper. Med. **100**: 71-79 (July) 1954.

4. Kroop, I. G., and Shackman, N. H.: Level of C-Reactive Protein as Measure of Acute Myocardial Infarction, Proc. Soc. Exper. Biol. & Med. **86**: 95-97 (May) 1954.

5. Good, R. A.: Acute-Phase Reactions in Rheumatic Fever, Symposium on Rheumatic Fever, Minneapolis, University of Minnesota Press, 1951, pp. 115-131.

6. Shetlar, M. R.; Bullock, J. A.; Shetlar, C. L., and Payne, R. W.: Comparison of Serum C-Reactive Protein, Glycoprotein and Seromucoid in Cancer, Arthritis, Tuberculosis, and Pregnancy, Proc. Soc. Exper. Biol. & Med. **88**: 107-109 (Jan.) 1955. Sprunt, D. H., and Hale, W. M.: Method of Evaluating Cancer Tests, abstracted, Proc. Am. A. Cancer Res. **2**: 47-48 (April) 1955.

7. Havens, W. P., Jr.; Eichman, H. L., and Knowlton, M.: Failure to Find C-Reactive Protein in Viral Hepatitis, Proc. Soc. Exper. Biol. & Med. **75**: 108-110 (Oct.) 1950.

8. Anderson, H. C., and McCarty, M.: Determination of C-Reactive Protein in Blood as Measure of Activity of Disease Process in Acute Rheumatic Fever, Am. J. Med. **8**: 445-455 (April) 1950.

9. Hedlund, P.: Appearance of Acute-Phase Protein in Various Diseases, Acta. med. scandinav., supp. 196, pp. 579-601, 1947.

PREVENTION OF RECURRENT ATTACKS OF RHEUMATIC FEVER

PROBLEMS REVEALED BY LONG-TERM FOLLOW-UP

Bessie L. Lendrum, M.D., Chicago
and
Charlotte Kobrin, M.S.W., Bartlett, Ill.

• *The cardiac status of 100 children with a history of rheumatic fever was reviewed at yearly intervals after their discharge from an institution where they had participated in a program of accelerated rehabilitation. Many were found to be without continued (though available) medical care, to have stopped taking any prophylactic medication, or to have been set back seriously in their emotional, social, or economic adjustment. Sixty-four had definite evidence of heart disease, but this fact seemed to play no significant part in getting patients to remain under medical care. The initiative of the patient and his parents does not suffice. Success in preventing recurrences depends on the development of a community-wide program, including some professional education and the dissemination of information about current rheumatic fever research.*

In 1949 a follow-up study was begun to evaluate the cardiac status of children who had participated in the Herrick House program of accelerated rehabilitation [1] after an acute attack of rheumatic fever. Herrick House is an institution where youngsters (ages 6 to 15 years) convalescing from rheumatic fever are made ambulant fairly rapidly once the clinical manifestations of the acute rheumatic processes have disappeared. At intervals starting one year after their discharge from Herrick House, these children are reexamined for evaluation only. In reviewing the data obtained on 100 children examined in 1955, three disturbing observations were made: first, almost one-third of the children were no longer under medical supervision; secondly, two-thirds of these 100 children were not receiving prophylactic medication; thirdly, adjustment problems at school and at home, which face the child who returns from Herrick House to his own environment, are not always successfully and most profitably dealt with. These observations led to a careful scrutiny of the data in an attempt to find out why these three situations occurred and how they could be prevented.

Findings

Discontinuance of Medical Care.—Twenty-nine of the 100 children were not under medical care. (It is of interest that, of 95 patients seen in 1949, 32% dropped out of medical care, approximately the same number as in this latest group.) Several possible explanations were considered, such as (1) lack of medical facilities, (2) lack of understanding by the patients and their parents of rheumatic fever as a disease process and what it means to them, (3) dissatisfaction with the

Research Director (Dr. Lendrum) and Social Worker (Mrs. Kobrin), Herrick House, Bartlett, Ill. Dr. Lendrum is now at Michael Reese Hospital, Chicago.

experience at Herrick House, or (4) lack of heart disease. Investigation, however, showed that none of these was the cause. There are available medical facilities, and every patient leaving Herrick House is either referred back to his private physician or given an appointment to the referring clinic. The significance of rheumatic fever to the patient is carefully reviewed with the parents by the admitting medical social worker. In addition, the medical director of Herrick House generally interviews the parents several times while their child is at the institution. He instructs them not only as to the current status of the child but also as to his future medical needs. The child, during the average stay of three months, is likewise thoroughly instructed as to how to cope with his medical problems. These careful educational efforts in themselves, however, have not proved adequate to ensure continued medical supervision for the rheumatic child.

Dissatisfaction with the experience at Herrick House was also discounted as a factor in the failure of 29 patients to continue under medical care. On the contrary, although no services were offered to the patients at the follow-up examinations, the good will they and their family felt toward Herrick House resulted in an amazing degree of cooperation. Over 96% (100 out of 104) of the former patients asked to report for an examination did so not only willingly but also, sometimes, at great inconvenience and even financial cost to themselves. This is certainly an indication that the patients and their parents had, by and large, an excellent relationship with the staff.

Incidence of Heart Disease at Follow-Up in 100 Children Treated for Rheumatic Fever

	Total Group Examined	No Medical Care; No Prophylaxis	Medical Care; No Prophylaxis	Medical Care; Prophylaxis
No heart disease	36	12	17	7
Definite heart disease	64	17	21	26
Totals	100	29	38	33

Lack of heart disease also did not appear to explain the failure to remain under medical care. Examination of the records showed that 17 of the 29 patients not in medical care had definite evidence of heart disease, and 3 of these 17 had severe heart damage (see table). Thus, in this group of 29, 41% had no evidence of heart disease and 59% had definite heart disease, of which 10% was severe. Similar grouping of the entire 100 patients showed that 36% had no evidence of heart disease and 64% had heart disease, of which 16% was severe. Accordingly, the percentage of patients with heart disease is about the same in the group without medical care as in the group under medical care. Even the severity of the heart lesion seems to play no significant part in getting patients to remain under medical care. It follows, therefore, from our experience that those patients with a history of rheumatic fever but with no evident heart disease are no more likely to drop out of medical care than those with definite heart disease.

The factors found to have been actually responsible for lack of medical supervision after convalescence were as follows: 1. Four patients not under medical care had attended pediatric-cardiac clinics until they reached the "age limit" for the clinics and were then discharged; they did not on their own initiative seek out adult cardiac clinics or private physicians for continued care. 2. Fifteen children got no medical care either because their parents could not accompany them to clinics for various reasons (such as daytime work, illness, or no one to care for small children in the home while attending the clinic) or because the parents were disinterested in following through on medical care. Often clinics have rules against seeing patients unaccompanied by parents even though the patient is willing to travel to the clinic alone and is old enough to do this. 3. Five patients did not continue under medical supervision because of their own rebellious and unrealistic attitudes. 4. Five patients dropped out for miscellaneous reasons, such as dissatisfaction with medical care, administrative error, physician's negligence, or patient's ignorance. It is of considerable interest that no great effort was needed to get 13 of these 29 patients who dropped out of medical care to return to a physician or a clinic. They did so after one interview, during the follow-up examination, with a physician and a social worker. This suggests that a simple follow-up system would significantly reduce the number of patients discontinuing medical supervision.

Lack of Prophylactic Medication.—The second major cause for concern was the observation that, of the 100 patients reviewed, 67 were not on a regimen of prophylactic medication as recommended by the American Heart Association (see table). Of these 67, 29 were not under medical care and, therefore, were not receiving medication. Though the remaining 38 were under medical care (24 under private and 14 under clinic care), they were not receiving the recommended daily oral doses of penicillin or sulfonamides or monthly benzathine penicillin G (Bicillin) injections. Of the 38 patients who were under medical care but were not receiving prophylactic medication, 47% had no heart disease and 53% had unquestionable heart disease, of which 10% was severe. The percentage of these patients with heart disease is not significantly different from that of the entire group of 100. Thus, the presence or absence of heart disease is not an adequate explanation of the failure to give prophylactic medication to those known to have had an attack of rheumatic fever.

Readjustment.—The third major cause for concern is more difficult to show by figures. It is well known that a serious, prolonged illness generally has some effect on the child's personality and on his subsequent readjustment to family, playmates, and school. Severe handicaps in readjusting to normal living may often result. Some of this is unavoidable, but much can be done to minimize or even prevent the resultant harm to the child. The program at Herrick House is specifically directed at minimizing adjustment problems. School teachers from the regular Elgin, Ill., school system conduct a full-time school program for all children at Herrick House as soon as they are no longer restricted to complete bed rest. The individualized attention possible in this setting not only permits the children to do as well as they do in their own schools but also often enables them to make up time lost due

to illness. Under the guidance of a consulting psychiatrist and the director of Herrick House, the entire staff has become attuned to detecting and handling problems of adjustment to the group as well as the person's adjustment to his own problems, created or accentuated by his illness. Occasionally the severely disturbed children are treated by the consulting psychiatrist or by some other individual.

When the child is discharged from Herrick House, he no longer is dealt with by the staff there and is referred back to his own clinic or private physician. A full report on such aspects as school performance and adjustment, medical status, and adjustment problems is sent to the child's school and clinic in the hope that he will continue the progress he has begun at Herrick House. Despite these efforts, the follow-up study showed that occasionally a child who had been doing well at school at Herrick House, and who had been looking forward eagerly to continued progress in both his health and his total rehabilitation, met with sharp disappointment that might have been avoided. For example, a doctor who wished to "play it safe" and who was, of course, unaware of the child's functional capacity (as displayed at Herrick House, where he could be observed carefully for 24 hours a day) might have kept the child at home at rest or partial rest until the "next visit." As a consequence, the boy or girl who had been successfully and safely playing baseball, swimming, hiking, and attending school, with a doctor's permission, suddenly was disturbed by renewed doubts about his health. Patient's and parent's anxieties were rekindled. Occasionally, a child was forced, unnecessarily, to repeat a year's schooling. These two avoidable types of setbacks constitute severe blows to most children and can permanently cripple them emotionally, socially, and economically. Several children became so discouraged that they dropped out or school.

Comment

Need for Prevention of Recurrence.—The information acquired by examining children who had recovered from acute rheumatic fever is a powerful plea for a well-organized community program to prevent the recurrence of rheumatic fever attacks in patients who are known to have had rheumatic fever. It seems clear that no single institution can cope with a problem of such magnitude, and breakdowns in follow-up care will occur when the patient leaves the jurisdiction of the institution or private physician. Recurrent attacks of rheumatic fever can now largely be prevented. The devastating effects of chronic, incapacitating disease to the individual, his family, and his community are familiar enough to all who work with any aspect of the resulting problems. Accordingly, such persons as physicians, social workers, and educators note with great enthusiasm the reports of highly successful measures that are capable of almost completely preventing rheumatic recurrences. The occurrence of initial attacks of rheumatic fever can also be reduced by prompt treatment of streptococcic infections. The mechanism of pathogenesis of this disease process is still unknown, and complete prevention of initial attacks is still not possible. This, however, should not beguile workers in the field of rheumatic fever into focusing solely upon the unsolved problems and neglecting to apply what is already known in the effort to stamp out rheumatic fever.

By far the greatest need at the present time is to put into action machinery for effectively applying the measures that we know to be capable of greatly reducing recurrences in patients who have had rheumatic fever. Known rheumatic patients should remain under regular medical supervision and receive prophylactic medication. The physician and his co-workers in associated professions who participate in this important task will achieve the important goal of very greatly reducing the incidence of disabling heart disease. They will save the individual patient, as well as his community, the suffering from physical, emotional, and social problems that attend all chronic diseases. In addition, countless numbers of dollars will be saved for the patient and his community.

Community Program.—An adequate communitywide program should include several essential features. First, it must have a registry of all individuals in the community known to have had rheumatic fever. This registry can serve numerous functions, but the most important function will be that of promptly detecting all instances in which a known rheumatic patient fails to carry out recommended medical follow-up and treatment. Having such a registry and the important information it supplies would permit implementing a successful prophylactic program. This can be achieved only if machinery exists for dealing with each instance of failure to follow the recommended medical program as soon as possible, so that no longer than a day or two elapses after a missed appointment before steps are taken to deal with the situation. For this part of the program each cooperating clinic would have its own resources and solutions. Communitywide integration is needed to take over the job where the clinic or private physician cannot cope with it. The health agencies that would assume this responsibility would, of course, vary from community to community. The board of health, local heart association, school health department, Public Health Service, voluntary groups interested in rheumatic fever, or a committee organized by the local medical society are a few agencies that might accept the responsibility for integrating the program. Whichever one the responsible agency might be, however, it will urgently require facilities for personal casework with delinquent patients. Those who perform this service may be nurses or social workers. The job will not profitably be confined to helping the patient keep his medical appointments or take his medicaments; a very important task would be that of helping a convalescent patient during the critical early days of his return to his own home and school or work environment. Many cardiac neuroses can be avoided by a bit of thoughtful help at this point. Implied, of course, is an educational program to be directed at the parents, clinic physicians, private physicians, and school teachers in order to supplement the actual individualized work with the patient.

Efforts likewise would need to be directed toward keeping the busy practicing physician informed of the

medical recommendations currently supported by the heart associations. The registry, social work, and other services would be to no avail, no matter how well done, if the physician treating the patient failed to order prophylactic medication or to treat streptococcic infections promptly. Physicians should be encouraged to use the laboratory methods available for detecting streptococcic infections. Their use would be possible only if such facilities were made readily available at minimal inconvenience and cost to the practicing physician. This, likewise, constitutes an important aspect of the community program.

Cost of Prevention.—Finally, the cost of prophylactic medication and laboratory work may be too great for the individual patient to meet even though he may not be medically indigent. A community would be wise to invest in the small cost of providing the needed medicaments and laboratory work. A tremendous economic saving would result that would not be readily apparent in the budget, since, to mention a few items, the costs of hospitalizing a rheumatic patient, sending him to special schools, and providing a home-teacher are not entered in the same column as is the cost of the medication to prevent these attacks. The cost saving is important, of course. Far more important, however, is the prevention of rheumatic recurrences and all their consequences. This can be only a community enterprise. Such a community program not only is urgently needed and feasible but also is a responsibility of the physician, who must assume leadership in the effort to prevent rheumatic fever.

Conclusions

Recurrences of rheumatic fever will not be prevented successfully if one relies solely on the initiative of the individual patient and his parents. A method must be devised for dealing with those individuals who for one reason or another do not carry out recommendations for medical follow-up care. Our findings indicate that professional education must be included in a community program directed at preventing rheumatic recurrences. All physicians, nurses, school teachers, and others who deal with rheumatic children or adults need to be informed promptly about new and important discoveries made in rheumatic fever research in order to give the best care to convalescents and to encourage full use of prophylactic measures. The occasional need for individual social service to achieve the best rehabilitation of the rheumatic child or adult when he returns to his own environment is also revealed by our study. Vocational guidance is at times gravely needed. All this requires a carefully thought out community-wide program, which must include a registry, a follow-up program, an educational program for the physician and his aides (the nurse, the social worker, and the school teacher), a method of providing prophylaxis, and the necessary laboratory service.

29th Street and Ellis Avenue (16) (Dr. Lendrum).

This study was supported by a grant from the Chicago Heart Association. Mrs. Edwin Eells, Director, Dr. A. J. Simon, Medical Director, and Drs. Oglesby Paul and L. N. Katz, members of the Medical Advisory Board, Herrick House, gave advice and assistance in this study.

References

1. Simon, A. J.; Mack, I., and Rosenblum, P.: Accelerated Rehabilitation in Rheumatic Fever, A. M. A. Am. J. Dis. Child. **83**: 454-462 (April) 1952.

FULL-TIME CLINICAL FACULTY

AN INTERPRETATION OF THE PROBLEM AS IT CONCERNS MEDICAL SCHOOL ADMINISTRATION

Joseph C. Hinsey, Ph.D., New York

As a member of a medical school faculty for the past 31 years, a dean of 12 years' tenure, and now a director of a medical center, I welcome this opportunity to try to interpret this problem, which is involved with the recruiting, maintaining, and compensating of staffs of our medical schools and teaching institutions. Inasmuch as the staff members of these institutions participate also in the educational programs of the allied health professions, what we are considering here is of vital importance to the maintenance of the nation's health. The administration of our teaching institutions not only is concerned with the staffing of our clinical departments, but also is faced with perplexing problems related to the teachers in the basic medical sciences.

Present Problems

There is serious competition for the services for these staff members from industry in addition to the attrac-

Director, New York Hospital—Cornell Medical Center.

Read before the Annual Congress on Medical Education and Licensure, Chicago, Feb. 13, 1956.

• *Medical schools must remain strong by recruiting and holding competent faculties; they should be encouraged to secure the services of full-time teachers and investigators under any reasonable plan that is satisfactory to the staff members and the schools and that will strengthen and improve the quality of medical education. The contributions made by part-time and volunteer faculty members are impressive and important, but their effectiveness is greatest in departments where there is full-time leadership. A proper balance between part-time and full-time staff is best. The development of prepayment plans for hospitals and medical services, together with other changes in economic, social, and professional conditions, necessitates corresponding evolutionary adjustments within our teaching institutions. If the profession will recognize the needs of the medical schools and if the administrations will see to it that they do not compete unfairly with the practicing profession, the necessary adjustments can be a gradual, continuing, and dignified process.*

tion of the private practice of medicine. What is done for the clinical department staff members has repercussions on the conditions of employment in other departments of the medical school and the rest of the university. While recognizing that some differential favoring the clinical staff members is indicated, the biochemists, pharmacologists, and anatomists find it difficult to understand why the surgeon should have an income many times their own. The full-time academic surgeon in turn sees the young men whom he has helped train go out into practice and in a short time exceed his earnings by sizable amounts. Furthermore, it taxes the ingenuity of university presidents to reconcile the salaries paid to professors of psychology, sociology, and English with those paid to the staffs of their medical schools. With the limited resources at his command, the medical college dean is forced sometimes to the consideration of complete abandonment of the full-time system and a return to a system of medical college staffing used at the beginning of the century, a step that would set medical education back in a harmful fashion. As a matter of fact, the full-time system as envisioned by Abraham Flexner in 1910 is just struggling along in many of our institutions. Many of our difficulties would be ironed out if we had a great deal more money, more than seems available at the present time.

The problems are complex and difficult and must be faced with fairness and equanimity. The medical profession has much to gain if our program of medical education remains vigorous and strong, and it has much to lose if our medical schools are weakened. All of us are into this together and must work it out in such a manner that the teaching of our future physicians and the members of allied health professions is maintained at a high level and is advanced whenever possible. In his address as President of the American Medical Association to the House of Delegates in Boston on Nov. 29, 1955, Dr. Elmer Hess [1] said:

> Another sore spot which has arisen in various parts of the country is the dispute over circumstances under which medical school faculty members are permitted to engage in the private practice of medicine as a means of supplementing income. This situation has created bad publicity in some of the cities I have visited. Surely, intelligent and temperate discussion of the problem within the profession would be more desirable than a public brawl. I understand that the Council on Medical Service is to make a progress report at this session on the exhaustive study of the problem which is being made in cooperation with the Council on Medical Education and Hospitals, the American Hospital Association and the Association of American Medical Colleges. Please let's work this out according to the needs of a given situation in a manner befitting intelligent, well-educated and mature men.

The medical school administrations must see to it that they do not compete unfairly with the practicing profession, and, by the same token, the profession should recognize the needs of our medical schools. Let us not confuse our code of medical ethics with medical economics. Medical schools must not exploit any members of their staffs, and, in turn, staff members must not exploit the institutions to which they belong.

Prof. Donald Fleming of Brown University has given an account of the differences of opinion held by the late Drs. Welch and Mall on the one side and the late Dr. Osler on the other.[2] It was in 1913 that Welch announced to the General Education Board that Johns Hopkins would institute a full-time system in the clinical departments, and the board then appropriated $1,500,000 to implement it. Fleming concludes his article by saying: "From 1913 forward to 1939 the principal objections to full-time for the leading men in clinical departments grew increasingly faint; and all progressive schools gravitated toward full-time." I shall not have time to discuss the factors that have made a core of full-time clinical staff members a necessity in our modern medical schools, but the demands of clerkships, undergraduate teaching, the development of outpatient departments for better teaching at all levels, the residency programs, medical research programs, and greater participation in community projects are known to all of you.

Definition of Full-Time Faculty Member

The word full-time has come to have a number of meanings, and we should bear in mind the definitions that accompanied the questionnaire under discussion. (The questionnaire discussed herein was prepared by the Council on Medical Service of the American Medical Association and was submitted to the deans of the 75 approved four-year medical schools and the 2 new four-year schools. It contained 13 major questions with subdivisions and dealt with the numbers, ranks, types of practice, and methods of compensating medical school faculties.)

A. An Absolute Full-Time faculty member has as his primary responsibility teaching and research activities in the Medical School and in its clinical facilities. His total income from professional activities is derived from the University and related sources. He may see and render care to pay patients only within the medical school and its clinical facilities, but his personal financial compensation from the Medical School is fixed without reference to such service. (It should be emphasized that he is not permitted to keep these fees. They are used by the university to support medical education and research.)

B. A Geographic Full-Time faculty member has as his primary responsibility teaching and research activities in the Medical School and in its clinical facilities. He receives a salary from the University and possibly from related sources, but he also has the privilege of receiving personal financial compensation for services rendered to pay patients, which he can care for in the clinical facilities of the medical school.

1. Geographic Full-Time, Unrestricted: No specific limit is placed (other than in keeping with the primary responsibility mentioned above) on amount of income derived from and/or time devoted to services to pay patients.

2. Geographic Full-Time, Restricted: A specific limit (over and above that related to the primary responsibility for teaching and research) is imposed by the University as to the amount of income that may be derived from and/or the time devoted to services to pay patients.

C. A Part-Time faculty member is a practicing physician who desires to devote part of his time to teaching and research in the Medical School and in its clinical facilities, for which he receives a nominal stipend. He maintains his own facilities for medical practice and is in no way responsible to the University in regard to where he sees pay patients, how many such patients are seen, nor how much income is earned.

D. A Volunteer faculty member is the same as a part-time faculty member except that, because of local tradition and/or amount of time and degree of responsibility involved, he receives no stipend from the University.

Current Practices

As I have visited medical institutions over this country and from experience in those where I have served, I have been much impressed by the contributions made by the part-time and volunteer faculty members. They serve an important function in community relations and in those with the outside profession, as well as what they do in teaching, research, and service. However, in general it may be said that they contribute most effectively in departments where there is full-time leadership; in my opinion, a proper balance between part-time and full-time staff is important for the effective functioning of a clinical department. One will find exceptions to a generalization of this kind.

It is fortunate that the study under discussion was undertaken, because it brings the practice of our various institutions out into the open. It shows how variable the methods of compensation are. It is to be regretted that adequate answers were not received from all the 75 approved four-year schools and the 2 new four-year schools to which the questionnaire was sent, but the 34 government and the 33 private schools on which the analysis was made give a good cross section of the nation's medical schools. The growth of the full-time system is indicated by the fact that 65% of government schools and 90% of private schools have a nucleus of absolute full-time clinical faculties. There are geographical full-time faculty members in 91% of the government schools and 84% of the private schools. Furthermore, 71% of government schools and 76% of private schools with absolute full-time clinical faculties permit private practice, although fees cannot be retained. However, it is extremely difficult to categorize these schools because of individual variations.

The fact that schools permitting private practice recognize a concern with the amount of such practice performed is shown by the methods of limiting it: placing ceilings on income, limiting time, limiting the number of patients, and limiting it to only referred patients. The most frequent limiting factor for absolute full-time faculty in government-owned schools is accepting "only referred patients" and in private schools "restricting the amount of income." In only a very small number of schools did the income of the absolute full-time staff members depend upon the number of private patients seen. It is significant that there is such a large percentage of schools using private patients for teaching purposes and that so many schools report that provision for private practice for the absolute and geographical full-time faculty members improves teaching and research. In my opinion, the most important finding of this whole study is that 25 of 34 government schools (73.5%) and 27 of 33 private schools (81.8%) believe that salary supplementation by fees from private patients is necessary to permit them to attract and retain competent full-time teachers. In addition, seven government and two private schools make the observation that it is partially necessary.

One point that should command attention in this discussion is the need for maintaining a balance of compensation in the various clinical departments. The surgeons and surgical specialists need less time to earn a given amount than the staff members in medicine, pediatrics, and psychiatry. This has been met in some institutions by group practice arrangements by which such inequities can be ironed out. At the fall meetings of the Association of American Medical Colleges, the following systems were described: the Full-time Plan at the University of Chicago, the Private Diagnostic Clinic at Duke University, the University of Virginia Plan, the University of Iowa Plan, and the Harvard University Plan. These plans and the many other ones that could have been described are different, but they work in each institution. In some of our state institutions, the full-time staff members, whether working on an absolute or a geographical full-time basis, are limited to work in tax-supported hospitals. This can lead to difficulties and misunderstandings with the outside profession. That a satisfactory solution can be worked out in such situations is admirably demonstrated in a number of government institutions.

Statement of Policy

For some time, many persons in medical education have looked forward to making a statement that would embody their judgment concerning the best policy for meeting the challenge facing medical education. The following statement was developed by a group from some of our medical schools and teaching hospitals and has been endorsed by the executive council of the Association of American Medical Colleges.

MEETING A CHALLENGE TO MEDICAL EDUCATION. The maintenance and improvement of the physical and mental health of the population are among the primary responsibilities of any nation. Health ranks in importance with other major features of the national economy, such as food supply, housing, employment, education, and industrial and agricultural production.

The level of any health service depends upon the competence of those who participate in it.

The future health of the people will depend in considerable measure upon the continuing supply of competent physicians. The education of physicians is a mutual concern of the universities, the medical schools, the teaching hospitals and the medical profession. The chief source of the supply of physicians will be the medical schools and teaching hospitals of the country.

In order that the high standards of medical education both for medical students and resident training may be maintained, it is essential that the universities, the medical schools, the teaching hospitals, and the medical profession appreciate the problems created for medical education by the changing pattern of medical and hospital services, a growing emphasis on medical research and the complexity of the operation of a modern teaching medical center.

The production of competent physicians by the teaching institutions will depend upon adequate facilities, financial support, the recruitment of a sufficient number of well-prepared students and particularly the maintenance of a staff of qualified scientists and clinicians dedicated to the education of physicians.

Prepayment plans for hospitals and medical services, which have shown a phenomenal growth in the last ten years, are having a pronounced impact upon the operation and financing of those services. The cost of medical and hospital services continues to rise so that prepayment becomes more and more necessary. The growth of knowledge with consequent specialization within the profession has introduced many new problems, partly answered by the evolution of group practice, preventive medicine and emphasis again upon the whole individual and family as the unit of medical care. All of these and other developments have produced considerable disruption in the older methods and forms of practice.

The hospital and medical service prepayment plans are sharply modifying an earlier concept of relying upon indigent patients in the hospital for the clinical instruction of medical students and

residents. Medical Education requires a satisfactory volume and balance of clinical material in order that the high level of bedside instruction be maintained. The steady diminution of ward patients will require a continuing readjustment in our approach to the use of private patients and those covered by prepayment insurance plans to insure the instruction of medical students and residents.

Adaptations of medical and hospital services to the changing economic, social and professional conditions are to be expected. They have created apprehension and fear on the part of those who are obliged to meet new situations. These are evolutionary adjustments identified with progress, although new methods, just because they are different, are not necessarily better. These changes inevitably will have an impact upon the problems of professional education.

In view of the heavy duties upon the staffs, particularly in the clinical departments, many medical schools have put some of the appointments in those departments on one or another type of full-time status in order to insure proper instruction of students, the conduct of research and the supervision of patient care. These developments have increased the effectiveness of instruction, the productivity in research and the quality of patient care in the hospitals.

The teaching institutions which have the function of preparing the future generations of physicians should be encouraged to secure the services of full-time teachers and investigators under any reasonable plan satisfactory to the staff members and the school that will strengthen and improve the quality of medical education. They should have the support of the profession, the universities, and the hospitals in their endeavors to maintain the quality of teaching which, in turn, will insure a high level of health services for the future. The teaching centers associated with medical centers should be concerned with providing patient care of the highest standard, and, in doing so in an ethical manner, they should be free from hampering regulation and censure by the medical profession. The profession and the teaching institution should work together to encourage legislation which will not restrict the teaching centers in performing their essential functions in a modern society.

In closing, I again want to make a plea for understanding and consideration on the part of my colleagues, the medical administrators and educators, and the medical profession. If we cannot continue to work this out on a basis that is mutually satisfactory, the alternative is one that we do not wish to contemplate. The medical profession is helping our medical schools through the American Medical Education Foundation and the National Fund for Medical Education. Your help will be even more substantial if you continue to help make it possible for medical schools to remain strong by recruiting and holding competent faculties.

525 E. 68th St. (21).

References

1. Hess, E.: President's Mid-Year Report, Organization Section, J. A. M. A. 159:1545-1548 (Dec. 17) 1955.
2. Fleming, D.: "Full-Time" Controversy, J. M. Educ. 30:398-406 (July) 1955.

ESSENTIALS OF A RESIDENCY PROGRAM IN GENERAL PRACTICE

Louis F. Rittelmeyer Jr., M.D., Jackson, Miss.

I would like to thank Dr. Kirklin and the Advisory Board for Medical Specialties for the invitation to speak to you today. It may have occurred to you—as it has to me—that the usual situation of a specialist addressing a group of general practitioners is reversed. I assure you that this general practitioner addressing this group of specialists is sincerely grateful for the opportunity but is not entirely comfortable in making use of it. The reason I am here is to share with you some of my ideas regarding residency training in the field of general practice. In sharing these ideas, I hope to give you one thing: my perspective. This then, is what one general practitioner thinks of graduate training for general practice.

This subject is relatively new. Until 1948, there was no organized effort to establish or standardize training past the internship for physicians who were preparing for general practice. At that time, the American Medical Association set forth the first Essentials of Approved Residencies in General Practice. In 1955, the Council on Medical Education and Hospitals joined with the American Academy of General Practice in creating a Residency Review Committee to approve programs of this type. This committee has also revised the "Essentials." These revisions have been accepted by the A. M. A. and the academy and are now in effect.

Several factors are responsible for this reawakening to the problem of training the family physician. As advances in medical science have made the practice of the art more complex and as the giant pyramid of specialty residencies has all but buried the internship in many places, it has become more and more apparent that a reappraisal of the needs of physicians preparing for general practice was necessary. The American Academy of General Practice, founded eight and one-half years ago, has been a major influence in the stimulation of this renewed interest in the educational needs of the family doctor.

• The need for highly competent personnel in the field of general or family practice will continue for some time. Changes in the medical school curriculum and improvements in internships must be supplemented by general practice residencies. In developing such residencies, the cooperation of the major specialty departments must be enlisted, but the advisability of accepting general practitioners as key men in the planning and supervision of these programs should be considered. The programs should be properly balanced. In institutions where residencies exist both for general practice and for specialties, the two types should be given equal standing and responsibilities. There must be no suggestion of inferior or second-rate training for the general practitioner, and competent family physicians must be permitted to make use of their training without the arbitrary restrictions too often placed on their activities.

Associate Profesor of Preventive Medicine and Director of the Section on General Practice, University of Mississippi School of Medicine.

Read before the Annual Congress on Medical Education and Licensure, Chicago, Feb. 12, 1956.

It seems to me that this is an appropriate time to organize our thinking on the subject and chart our course for the future development of training programs for general practitioners. Let us consider these questions. First, is our goal clearly in view; do we know what we want to accomplish? Second, what ingredients must a residency have for official approval and for effective teaching? Third, how can the program be coordinated and integrated with the existing educational activities of the hospital?

Before attempting to answer these questions, I should like to mention that at the present time I am preparing a general practice residency for the University Hospital in Jackson, Miss. It is still in the blueprint stage. Obviously, I cannot give you any pat answers about how to operate a program. What I can tell you is how we are approaching the problems that are bound to arise in getting such a program under way. I should also like to state that, although I am a member of the Residency Review Committee for General Practice, I am offering these opinions as my own. I think the other committee members agree with most of these points, but I will not presume to speak for them.

What Is Our Goal?

Dr. Albert Dix,[1] of Mobile, Ala., speaking to the State Officers' Conference of the American Academy of General Practice last year, expressed our goal very well. He said, "In planning hospital training for the family doctor we must bear in mind the definite differences in his philosophy and that of the specialist. The specialist is to become more or less a finished product in a limited field. The family doctor is to become a growing organism, well planted but adaptable to an ever-changing situation. His education is truly a lifelong experience." Some of you may disagree with this view of specialty training. I would rather not argue that point. What I want to emphasize is this: for the generalist, the internship and residency are only the beginning—the foundation—of a larger educational experience that will continue for a lifetime. The purpose of a residency, therefore, is to make this foundation for future education and practice a firm one.

Since its beginning, the American Academy of General Practice has required postgraduate training of its members. I am sure you are aware of the healthy effect that this requirement has had in stimulating more and better postgraduate courses for family doctors. Last year the academy inaugurated a residency requirement for new applicants. This is not an absolute requirement, but only physicians with two years of approved residency training, in addition to one year's internship, are now eligible for active membership immediately upon entering practice. I have mentioned these postgraduate requirements to show how effectively the American Academy of General Practice has stimulated postgraduate education among its 20,000 members and to express the hope that the residency requirement will do as much for graduate training. For the first time, and I think this is significant, medical students are being given a clearly charted course to follow to qualify themselves as well-trained family physicians. It is more necessary now than it has ever been to provide them with residencies of high quality.

What Should a General Practice Residency Contain?

It is evident that no two hospitals can offer identical programs in a field as broad as general practice. Even if it were possible, it probably would not be desirable—individual needs vary too much. However, some standardization is necessary. These standards are set forth in the revised "Essentials." I will quote the part that specifies the ingredients that should be present:

> General practice residencies should be flexible, both as to content and duration, depending upon the special needs of the individual resident. It is recommended that residency programs be of at least two years' duration. In a two-year residency, the first year should be devoted to general medicine; i. e., internal medicine, the medical specialties, psychiatry, and pediatrics (including contagious diseases). The second year may be devoted to training in surgery, obstetrics and gynecology. The surgical fields to be covered ordinarily should include general surgery, traumatic surgery, fractures and operative gynecology. Any service offered during this second year must be of at least three months' duration.

As you can see, this is not a repetition of the merry-go-round of a rotating internship. The entire first year is devoted to the study of the whole patient. The second year may be devoted to surgery, obstetrics, or even narrower fields. Still, no service can be of less than three months' duration. This is intended to ensure against sincere but misguided attempts to cover too much territory too quickly. Generally speaking, the residency is divided equally between medicine and surgery, using those terms in a broad sense. I feel that it is important to place them in that order. A general practitioner's basic function as general manager of a family's medical affairs requires that his skill in diagnosis and medical management be good. Whether he will eventually do more surgery than he learns as an intern will be determined to some extent by the need in his community and by his own conscience. In any event, additional training in medicine, pediatrics, and psychiatry is helpful to all family doctors. Training in major surgery is a relative necessity and should, in my opinion, be sought only by those who intend to practice in areas where surgical consultants are not readily available.

I would like to call your attention to the sentences concerning surgical training. "Time devoted to general surgery and a surgical specialty should emphasize diagnosis, pre-operative and post-operative care, minor surgery and emergency care, but should also offer an increasing opportunity to assist with and perform common emergency and elective operative procedures. It should be recognized that there is limited educational value in a general practice residency in assisting with highly specialized surgical procedures of an advanced nature." In other words, if a resident in general practice wants to develop additional skill in handling common surgical conditions, he should be offered the opportunity. On the other hand, he should not be exploited by having to assist with complicated procedures that he will never perform.

Again quoting the "Essentials," "An important consideration in evaluating a residency program in general practice is the availability of adequate experience in the medical management of ambulatory patients. Hospitals that have no organized outpatient department should provide the resident with an opportunity to compensate for this deficiency, such as that provided in a home care program or preceptorship." The need for giving a prospective family physician experience in caring for outpatients is self-evident. Although an outpatient department is the usual means used to provide this training, it is not the only way. Preceptorship under a practicing family doctor for a month or more each year would be a valuable experience. A home care program throughout the resident's tenure would offer continuity and closeness in his relationships with patients and give him a great deal of insight into the problems of sick people.

An important consideration that has never been clearly defined is the status of general practitioners on the staffs of hospitals offering general practice residencies. Heretofore, the residency review committee has not insisted that general practitioners participate in the planning and conduct of these programs. However, in view of a recent action by the A. M. A. House of Delegates, this may change. The resolution states:

> *Resolved,* that, subject to review by Counsel of the American Medical Association, the representatives of the Association on the Joint Commission on Accreditation of Hospitals be instructed to stimulate action by that body leading to the warning, provisional accreditation, or removal of accreditation of community or general hospitals which exclude or arbitrarily restrict hospital privileges for generalists as a class regardless of their individual professional competence, after appeal to the Commission by the county medical society concerned.

I do not know where this action will lead as far as hospital accreditation is concerned. It would appear reasonable to suggest, however, that hospitals seeking approval of residencies in general practice should be prepared to accept general practitioners as key men in the planning and supervision of these programs.

How Does General Practice Residency Fit In?

In planning a general practice residency at the University Hospital, I have not solved all of the problems, but I believe I am aware of them. They are not too different from those encountered by others in activating similar programs. From my observations, relatively few pitfalls are most likely to upset a potentially good program. Taking the following steps should obviate most of these difficulties.

The first and most important step is to enlist the cooperation of the major specialty departments. A unique feature of the general practice residency is its dependence on physicians in other fields of practice to do a considerable portion of the teaching. Surgeons train surgery residents, internists train medical residents. These and many other specialists, as well as general practitioners, are needed to properly train general practice residents. They are doing this in 167 hospitals, including 8 affiliated with medical schools. The cooperative spirit with which these specialists have entered into this endeavor is tangible evidence that they are sincere in their desire to improve the standards of the family physician. Without their help, it would be impossible to have general practice residencies.

The second step is to give the program proper balance. Emphasis should be placed on activities that will best prepare physicians for family practice—not necessarily in those fields for which the particular hospital needs the largest house staff. If the patient load on any service is not sufficient to provide adequate experience for the resident, affiliation with another institution may well be used to fill this deficiency.

The third step is necessary only in hospitals that train residents in specialty fields. It consists basically of providing good training for both groups of residents by refusing to sacrifice the needs of one to the interests of the other. There are two facets to this problem. One involves a rather intangible, but nevertheless important, concept. The general practice resident should be given as much authority and responsibility as other first year residents. Every effort should be made to avoid letting him feel like a fifth wheel. The other facet of the problem is in integrating the general practice program with others being conducted. This is not difficult in medicine, pediatrics, and obstetrics, but may present some problems in surgical fields. It can be done and is being done in many hospitals. The solution usually entails no more than taking the trouble to work out a satisfactory formula.

Conclusions

It would be conventional to conclude this discourse with a summary of the facts and opinions I have presented. If my only purpose in speaking were to inform you of the requirements of a general practice residency, such a summary might be appropriate. However, I hope to do more than that, because I think it is vitally important for you to realize the urgent need for developing good graduate training programs specifically designed for future family doctors.

In 1954, Dr. Holland Jackson,[2] a general practitioner in Fort Worth, Texas, wrote: "What is at stake here is the development of a new man of medicine. If he can be achieved, all doctors will have the same level of medical education, and it will be high. There must be no suggestion of inferior or second-rate training for this new man of medicine."

The American Medical Association and the American Academy of General Practice have stated repeatedly that the one-year internship is no longer adequate to develop the full potential in a physician. Yet only 65% of the available positions in general practice residencies are filled. Too many hospitals are creating these positions for the convenience of the attending staff rather than the education of resident physicians. There are actually fewer doctors in general practice residencies today than there are in the fields of anesthesiology, ophthalmology, radiology, or urology. On Sept. 1, 1954, there were only 404 physicians in general practice residencies as compared to 20,090 training in specialty fields.[3] The new man of medicine will be a long time arriving at that rate.

The greatest problem facing American medicine today is how to provide our patients with modern, comprehensive care at reasonable cost. Fortunately, progress is being made. Medical schools are revamping their curriculums to better prepare their graduates to cope with the problems of patient care in our changing society. The internship is under constant scrutiny to help us find ways of improving it. Residencies in every specialty are being improved and enlarged with almost frightening speed. These accomplishments are remarkable and reflect great credit on the men and women who have worked so hard for their realization.

These efforts alone, however, will not produce the new man of medicine. And he is the man who will do more than any one else to fulfill the needs and demands of the American people. The future of the family doctor is the future of the free practice of medicine in this nation. To make sure he can fulfill his destiny should be the concern of every one of us. In the development of general practice residencies, we are still dragging our feet. We must awaken to the fact that the graduate education of the family physician is just as important as the undergraduate and postgraduate. An editorial[4] in THE JOURNAL of the American Medical Association last year expressed the problem clearly:

Medical educators face the challenge of the needs in graduate education for those who choose this field and development of programs that will reflect the same thought and consideration that has been given to graduate medical education in the narrower specialty fields. Trends in specialization will not eradicate, in the foreseeable future, needs for well-qualified and highly competent personnel in the field of general or family practice. Is it not time, therefore, that every effort should be made to assure the same high standards of preparation for "specialists" in this important field as have been given to the preparation of personnel in the narrower specialties?

We need more general practice residencies and we need better ones. Students must be stimulated and encouraged to avail themselves of this type of training. And competent family physicians must be permitted to make use of their training in caring for their patients, without the arbitrary restrictions too often placed on their activities. This is as much your responsibility as it is mine. It is not too late, but there is no time to lose.

References

1. Dix, A. S.: Planning General Practice Residency, GP **12**: 135-138 (Aug.) 1955.
2. Jackson, H. T.: Medicine's Challenge—and Reply, GP **10**: 111-117 (Oct.) 1954.
3. Leveroos, E. H.; Springall, A. N., and Heinze, C. T.: Approved Internships and Residencies in United States, J. A. M. A. **159**: 251-260 (Sept. 24) 1955.
4. Background for General or Family Practice and Specialization, editorial, J. A. M. A. **159**: 609-610 (Oct. 8) 1955.

REVERSIBLE POSTOPERATIVE NEUROLOGICAL SYMPTOMS

REPORT OF FIVE CASES SECONDARY TO WATER INTOXICATION AND SODIUM DEPLETION

Lloyd G. Bartholomew, M.D.
and
Donald A. Scholz, M.D., Rochester, Minn.

• *Coma, hemiparesis, generalized convulsions, and other alarming neurological symptoms occurring postoperatively in five patients were shown to be associated with water intoxication and an unrecognized depletion of sodium. The diagnosis was verified by studies of the blood electrolytes and by the prompt clinical response to the intravenous administration of sodium chloride. The possibility of water intoxication and depletion of sodium should be considered in all patients in whom neurological disturbances develop during the first few days after operation.*

The possibility of water intoxication deserves serious consideration whenever acute neurological symptoms develop early in the postoperative period. Patients depleted of extracellular electrolytes are most susceptible to this disturbance in water balance. The widespread use of diets containing small amounts of sodium, alone or in conjunction with use of mercurial diuretics, frequently leads to depletion of the body's stores of sodium. The postoperative use of excessive amounts of nonelectrolytic solutions, principally a 5% solution of dextrose in water, in these or other patients who have experienced excessive preoperative loss of sodium chloride from the gastrointestinal tract may lead to unexpected and alarming neurological symptoms. The clinical signs and symptoms associated with mild degrees of water intoxication are nervousness, salivation, and vomiting. Disorientation, twitching of the extremities, stupor, convulsions, and coma have been noted in the more severe degrees of water intoxication. The clinical signs and symptoms usually associated with severe deficiency of sodium itself are primarily those of peripheral vascular collapse, namely, hypotension, coldness of the extremities, and a rapid, thready pulse.

From the Section of Medicine, Mayo Clinic and Mayo Foundation. The Mayo Foundation is a part of the Graduate School of the University of Minnesota.

Pronounced impairment in renal function may develop. We have encountered five patients in whom severe but completely reversible neurological signs and symptoms developed during the postoperative period after administration of relatively large amounts of a 5% solution of dextrose in water. Unsuspected preoperative deficiency of sodium was present in three of these patients.

Report of Cases

CASE 1.—A 70-year-old woman was seen at the Mayo Clinic in August, 1953. She complained of four severe attacks of abdominal pain in the previous 15 years. The history was extremely suggestive of recurrent biliary colic, but jaundice had not occurred. She was known to have had hypertension for 15 years but

denied having had any particular treatment for it. Examination showed that the blood pressure varied between 138 to 155 mm. Hg systolic and 70 to 78 mm. Hg diastolic. A grade 1 systolic murmur was heard best over the aortic region. The edge of the liver was palpable 2 to 3 cm. below the right costal margin. Results of urinalysis were normal. The value for hemoglobin, the erythrocyte and leukocyte counts, the erythrocyte sedimentation rate, the amounts of serum bilirubin and lipase, and the results of a test of hepatic function with sulfobromophthalein sodium were normal. Roentgenographic examination of the skull revealed calcification of the falx and of the internal carotid arteries in the region of the sella. The gallbladder was not visualized roentgenographically. Fluoroscopic examination of the upper part of the intestinal tract disclosed a duodenal deformity. Cholecystectomy was advised. At operation, the gallbladder was found to be shrunken and densely adherent to the duodenum. When these two organs were separated, there appeared to be a cholecystoduodenal fistula. The gallbladder was removed in the usual manner. The pathological diagnosis was subacute ulcerative cholecystitis superimposed on chronic cholecystitis.

The postoperative course was uneventful until about the 34th hour. The patient then had a generalized convulsive seizure, with biting of the tongue, frothing at the mouth, and incontinence of urine. She became semicomatose a few minutes later. Babinski's sign was present bilaterally. The patient was aphasic within a few hours and had hemiparesis on the right. Review of the complete postoperative period revealed that the patient had passed approximately 1,300 ml. of urine and had received 5 liters of a 5% solution of dextrose in water. It was learned from her husband at this time that she had been following a fairly strict low-salt dietary regimen for the previous year. The possibility that her symptoms were secondary to water intoxication superimposed on depletion of sodium was then considered. Blood studies showed the following values: plasma chlorides, 85.7 mEq. per liter; urea, 14.0 mg. per 100 ml.; serum sodium, 112.0 mEq. per liter; and serum potassium, 3.0 mEq. per liter. Because of the longer time entailed in the determination of sodium and potassium, treatment in this and the other four cases was begun before values for these two constituents were available. A 5% solution of dextrose in isotonic sodium chloride was given. The patient gradually began to improve, and she fully regained consciousness. The concentration of serum sodium was normal for the first time on the seventh postoperative day, by which time the patient was able to talk, was well oriented, and had no evidence of hemiplegia. The remainder of the postoperative course was uneventful, and she was dismissed from the hospital on the 16th postoperative day.

Case 2.—A 72-year-old woman made her sixth visit to the clinic in September, 1953. She had been observed at various intervals since 1938. On her first visit, a diagnosis of duodenal ulcer and diffuse arteriolar disease with group 2 hypertension was made. In 1947, obstruction of the duodenum developed. Because of the patient's age and the hypertension, posterior gastroenterostomy was performed. In March, 1950, dysphagia developed, and a large pharyngoesophageal diverticulum was excised in one stage. Both surgical procedures were well tolerated, and the patient made uneventful recoveries. Later in 1950, hemiplegia on the left and aphasia developed. The defect in her speech gradually disappeared, although weakness in the left arm and leg persisted. In August, 1953, she noted the onset of epigastric burning distress and vomiting of the retention type. These symptoms continued for about six weeks prior to her return to the clinic. Examination revealed a blood pressure of 190/100 mm. Hg, hemiplegia with Babinski's sign on the left, and a loud succussion splash in the epigastrium. Results of routine urinalysis and hematological studies were normal. The blood urea was 46.0 mg. per 100 ml.; plasma chlorides measured 98.2 mEq. per liter; and the carbon dioxide–combining power was 33.0 mEq. per liter. Roentgenographic examination of the thorax revealed calcification of the aorta. Fluoroscopic studies of the upper part of the gastrointestinal tract showed a duodenal ulcer with obstruction and a nonfunctioning gastroenteric stoma. The patient was given a diet designed for use in gastric obstruction. Stomach lavage was done twice daily. The amount of gastric contents aspirated varied between 100 and 900 ml. On the 12th day in the hospital, an abdominal exploration was performed. The gastroenteric stoma was found to be malfunctioning because of the presence of an anastomotic ulcer. The duodenum was narrowed and almost completely obstructed. The operation consisted of partial gastrectomy and duodenectomy with an anterior Polya anastomosis.

On the day of operation, the patient received 500 ml. of blood, 2,100 ml. of a 5% solution of dextrose in water, and 1 liter of a 5% solution of dextrose in isotonic sodium chloride. On the second postoperative day, she received 4 liters of a 5% solution of dextrose in water. In addition, 400 ml. of fluid was obtained by means of gastric suction. She became drowsy and unresponsive approximately 30 hours after operation. In addition to the old hemiplegia on the left, there now appeared to be facial weakness on the right and increased spasticity of the right arm and leg. Babinski's sign was present on the right side. The initial clinical impression was that the patient had cerebral thrombosis on the left. However, in view of a possible fluid and electrolytic disturbance, blood studies were made. The value for blood urea was 24 mg. per 100 ml., and the plasma chlorides and carbon dioxide–combining power measured 66.0 and 23.0 mEq. per liter respectively; serum sodium and potassium measured 114.0 and 2.5 mEq. respectively. In the next 36 hours, a total of 6 liters of a 5% solution of dextrose in isotonic sodium chloride was administered intravenously. The patient's condition gradually began to improve, and she regained consciousness. The hemiparesis on the right disappeared, but the status of the old hemiplegia on the left remained unchanged. The patient was dismissed on the 13th postoperative day with no evidence of hemiparesis on the right.

Case 3.—An 80-year-old woman was seen at the clinic in December, 1954. She complained of anorexia and loss of 10 lb. (4.5 kg.) during the preceding year. She had noticed severe constipation alternating with diarrhea four weeks prior to admission. Examination revealed a hard fixed mass high in the rectum. Results of routine laboratory tests were within normal limits. Roentgenographic examination of the colon revealed almost complete obstruction in the lower portion of the sigmoid. Laparotomy was performed after suitable preparation of the intestine. The sigmoid was found to be the site of a perforating obstructive mass. The involved portion of the sigmoid was resected, and end-to-end anastomosis was accomplished. The pathological diagnosis was diverticulosis, diverticulitis, and peridiverticulitis. The postoperative course was uneventful for approximately 46 hours. The patient then became comatose. Generalized muscular twitchings were observed. Neurological examination revealed divergence of the eyes, transitory nystagmus, failure to move the left arm and left leg after noxious stimuli, generalized tendon hyporeflexia, and Babinski's sign in the left foot.

Since operation, the patient had passed approximately 2,000 ml. of urine and had received 5 liters of a 5% solution of dextrose in water. It was then learned from the family that she had been avoiding the use of salt in her diet for at least six months. The possibility of water intoxication superimposed on depletion of sodium was then considered. Blood studies revealed the following values: plasma chlorides, 66.0 mEq. per liter; carbon dioxide–combining power, 17.5 mEq. per liter; urea, 16.0 mg. per 100 ml.; and serum sodium and potassium, 105.0 and 2.2 mEq. per liter respectively. A total of 300 ml. of a 5% sodium chloride solution was then given intravenously. One hour later, the patient began to move all four extremities. In the second hour, she regained consciousness and responded to her name. Three hours after the onset of treatment, all the neurological signs had disappeared except Babinski's sign. Results of neurological examination were completely normal on the following morning. Intravenous administration of isotonic sodium chloride solution was continued during the next few days. Potassium chloride also was given intravenously. Improvement was maintained, and she was dismissed on the 17th postoperative day, at which time the blood electrolyte values were normal.

Case 4.—A 50-year-old woman registered at the clinic in August, 1955, complaining of periodic discharge from the left nipple. She had undergone cholecystectomy for gallstones in 1952. An incidental finding at the time of operation was a 3-cm. mass in the anterior wall of the stomach. Subtotal gastrectomy also was performed. Pathological examination showed carcinoma of the stomach without evidence of local metastasis. Subsequent examinations failed to reveal any evidence of recurrence of the

tumor. The only abnormal finding on general examination at the clinic was discharge from the left nipple. Results of routine laboratory studies and roentgenography of the thorax were within normal limits. Fluoroscopic studies of the stomach revealed a high gastric resection with a freely functioning Polya type of anastomosis. The clinical impression was an intraductal papilloma of the left breast. Simple mastectomy was advised. The surgical findings confirmed the clinical diagnosis. The postoperative course was uneventful for approximately 36 hours. The patient then became semicomatose. Neurological examination revealed generalized tendon hyporeflexia, deviation of the eyes to the left, and Babinski's sign in the left foot. She became increasingly unresponsive during the next eight hours.

Review of the postoperative period disclosed that the patient had passed approximately 1 liter of urine and had had a total emesis of about 500 ml. During this time, she had received 6 liters of a 5% solution of dextrose in water. No history of restriction of salt or excessive loss of sodium could be obtained. In view of our previous experiences, the possibility of water intoxication was considered. Blood studies revealed the following values: plasma chlorides, 81.0 mEq. per liter; carbon dioxide–combining power, 18.0 mEq. per liter; urea, 15.0 mg. per 100 ml.; and serum sodium and serum potassium, 111.0 and 3.3 mEq. per liter respectively. One liter of isotonic sodium chloride solution was given intravenously. The patient began to improve and within a few hours regained consciousness. A total of 300 ml. of a 5% sodium chloride solution was then administered intravenously, followed by a liter of isotonic sodium chloride containing potassium chloride. Steady clinical improvement was maintained, and results of neurological examination were completely normal within 36 hours. Associated with this clinical improvement was pronounced diuresis. The patient was dismissed on the 10th postoperative day, at which time the blood electrolyte values were normal. An electroencephalogram taken during the period of unconsciousness showed grade 3 dysrhythmia, with no evidence of a focal organic process. The type of changes noted suggested the possibility of a metabolic disorder. Two days later, the electroencephalogram had returned to normal.

Case 5.—A 73-year-old man registered at the clinic in August, 1955. During the previous four months he had noted four attacks of epigastric and low substernal pain radiating to the left arm. These were associated with nausea and occasionally required an injection of meperidine (Demerol) hydrochloride for relief. Results of general examination and routine laboratory studies were completely negative. Electrocardiography and an exercise-tolerance test gave no objective evidence of coronary insufficiency. Roentgenograms of the gallbladder revealed cholelithiasis. Atypical gallbladder colic was considered to be the cause of his symtoms, and cholecystectomy was recommended. At operation, the gallbladder was distended and contained multiple stones. The gallbladder was removed in the usual manner. Further exploration of the abdomen revealed nothing of significance. The pathological diagnosis was chronic cholecystitis with multiple stones.

The postoperative course was not remarkable until the fifth day, at which time the patient complained of abdominal pain; later, the abdomen became moderately distended. It became necessary to institute gastric suction and to administer fluids parenterally. Generalized convulsions suddenly developed on the sixth postoperative day, with frothing at the mouth, stertorous respiration, and incontinence of feces. Neurological examination revealed lateral nystagmus and rigidity of all extremities. Babinski's sign was not present. A period of confusion followed the convulsive seizure. Review of the entire postoperative period revealed that the patient had received 11.0 liters of a 5% solution of dextrose in water, 4.0 liters of a 5% solution of dextrose in sodium chloride solution, and approximately 2.5 liters of fluids given orally. During this same period, a total of 1,800 ml. had been lost by emesis or gastric suction. The excretion of urine had averaged about 1 liter daily. The possibility of water intoxication was considered. Blood studies revealed the following values: plasma chlorides, 92.0 mEq. per liter; carbon dioxide–combining power, 21.0 mEq. per liter; urea, 26.0 mg. per 100 ml.; and serum sodium and serum potassium, 124.0 and 2.7 mEq. per liter respectively. Replacement therapy was started with a solution of 5% dextrose in isotonic sodium chloride, to which potassium was added. The patient's condition steadily improved. Within 24 to 36 hours the patient felt essentially normal and was able to take the necessary fluids orally. The blood electrolyte values rapidly returned to normal. Later studies, including a roentgenogram of the skull and an electroencephalogram, gave normal findings.

Table 1.—*Postoperative Neurological Disturbances in Five Patients with Water Intoxication*

Case	Sex and Age, Yr.	Preoperative Depletion of Sodium	Operation	Postoperative Neurological Disturbances	Fluids Given Postoperatively Prior to Neurological Disturbances	Immediate Treatment For Neurological Disturbances
1	F 70	Low-sodium diet, 1 yr.	Cholecystectomy	Generalized convulsion, coma, and hemiplegia on right, 34 hr. postoperatively	5 liters of 5D/W*	3 liters of 5D/S† in 36 hr.
2	F 72	Gastric obstruction and vomiting	Subtotal gastrectomy	Semicomatose with hemiplegia on right, 30 hr. postoperatively	500 ml. of whole blood; 6 liters of 5D/W; 1 liter of 5D/S	6 liters of 5D/S in 36 hr.
3	F 80	Low-sodium diet 6 mo.	Primary resection of sigmoid	Muscle twitchings, coma, and hemiparesis on left, 46 hr. postoperatively	5 liters of 5D/W	300 ml. of a 5% sodium chloride solution in 4 hr.; then isotonic sodium chloride
4	F 50	None	Simple mastectomy	Deep coma, 48 hr. postoperatively	6 liters of 5D/W	1 liter of isotonic sodium chloride followed by 300 ml. of 5% sodium chloride in 24 hr.; 1 liter of isotonic sodium chloride later
5	M 73	None	Cholecystectomy	Generalized convulsion, semicomatose, 6 days postoperatively	11 liters of 5D/W; 4 liters of 5D/S; 2.5 liters of fluids orally	2 liters of 5D/S in 24 hr.

* 5D/W=5% solution of dextrose in water. † 5D/S=5% solution of dextrose in isotonic sodium chloride.

Comment

Some of the clinical and therapeutic data in our five cases are summarized in table 1. Four of the five patients were women. All the patients were in the older age group, which agrees with the usual age incidence noted in previous reports on water intoxication. The onset of neurological symptoms occurred within 48 hours after operation in four of the cases. Zimmermann and Wangensteen [1] have stressed that most seizures attributed to water intoxication tend to occur within the first 48 hours after operation. Definite predisposing factors for deficiency of sodium chloride were present in three of our five patients, namely, prolonged preoperative periods of deprivation of salt in two patients and excessive loss of electrolytes from the gastrointes-

tinal tract in one patient. The low values for serum sodium, serum potassium, and plasma chlorides, along with the normal values for blood urea, were the most significant laboratory findings (table 2). This is in keeping with the experiences of Wynn and Rob,[2] as well as of Zimmermann and Wangensteen, who showed that the symptoms of water intoxication developed in most patients when the serum sodium value was reduced to less than 120 mEq. per liter. In the 17 cases reported by Zimmermann and Wangensteen, most of the values for sodium were less than 120 mEq. per liter and three were less than 110 mEq. It would appear that hyponatremia was a far more significant factor in the genesis of the neurological complications than was hypokalemia, since clinical improvement was noted in all of our cases after the intravenous administration of isotonic or concentrated sodium chloride solution without the addition of potassium. Wynn and Rob have reported similar experiences in which the symptoms of water intoxication responded dramatically to treatment despite the fact that coincident depletion of serum potassium was unchanged or became worse because potassium was not given. However, when it becomes known that a deficiency of potassium exists, potassium salts should be administered by either the oral or the parenteral route. The possibility that these neurological symptoms might be related to postinfusion hypoglycemia [3] deserves mention. This would appear to be completely excluded in four of our five patients, since they were receiving dextrose in water intravenously at the onset of symptoms.

TABLE 2.—*Values for Blood Electrolytes at Onset of Neurological Symptoms in Five Cases*

Case No.	mEq./Liter				Urea, Mg./100 Ml.
	Sodium	Potassium	Chlorides	Carbon Dioxide—Combining Power	
1	112	3.0	85.7	...	14
2	114	2.5	66.0	23.0	24
3	105	2.2	66.0	17.5	16
4	111	3.3	81.0	18.0	15
5	124	2.7	92.0	21.0	26
Normal values	135-145	4-5	97-106	25-29	10-40

Treatment.—The postoperative neurological complications in our patients were dramatic. Definite neurological signs of hemiparesis were present in two patients, while one patient had generalized convulsions associated with signs of hemiplegia. One patient had a generalized convulsive seizure, and the fifth patient became deeply comatose. The initial clinical impression in patients who had hemiplegia was an acute focal cerebral ischemia on the basis of either cerebral thrombosis or hemorrhage. When the diagnosis of water intoxication associated with possible deficiency of sodium was considered and the proper therapy was instituted, the clinical response of the patients was most gratifying. As stressed by Moore,[4] the treatment of mild water intoxication or dilution of sodium is first to limit the intake of water. The patient should be given no water whatsoever for 24 hours, and intravenous infusions should not be given until adequate laboratory studies can be carried out. In cases of severe degree, the careful and judicious administration of hypertonic solutions of sodium chloride is usually effective in correcting symptoms. In a mixed disturbance of deficiency of sodium with superimposed water intoxication, small infusions of hypertonic sodium chloride, such as 300 ml. of a 3 to 5% concentration, usually restore the extracellular compartment toward normal tonicity and thereby cause a shift of water from the cells. Hypertonic sodium chloride solution was administered with prompt results in two of our patients. On theoretical grounds, Wynn and Rob stressed the relative ineffectiveness and potential danger of treating water intoxication with infusions of isotonic sodium chloride. They considered that use of isotonic sodium chloride increases the volume of extracellular fluid and fails to increase the value of plasma sodium significantly, with resultant failure to relieve the overhydration of the cells. Nevertheless, administration of isotonic sodium chloride solution to three of our patients led to dramatic improvement and ultimate disappearance of the neurological symptoms. In the face of a decrease in serum sodium value, isotonic sodium chloride is in reality a hypertonic solution and, therefore, serves to increase the effective osmotic pressure of the plasma sufficiently to relieve intracellular edema. Coincident improvement in renal function and a diuretic response could be expected with increase of the level of serum sodium. However, we are in full agreement that treatment with hypertonic sodium chloride solution is the most effective and safest method when a definite diagnosis of acute water intoxication can be made on the basis of clinical observations and confirmatory laboratory data.

Predisposing Circumstances.—Certain circumstances predispose the patient to the development of water intoxication. A low intake of salt during the preoperative period may abet the development of water intoxication. McCance [5] has shown that extremely low concentrations of serum sodium can be produced by depletion of sodium without depletion of water only when the loss of sodium has been large. It has been recognized for years that the values of serum sodium and chloride regularly decrease from preoperative levels during the first 24 hours after operation.[1] The exact mechanism for the depression of these major extracellular electrolytes remains to be explained, although the function of the adrenal cortex ultimately may be proved to play an important role. Diminution of serum sodium also may produce a decrease in glomerular filtration and the diuretic responses to a water load. Preexisting renal insufficiency may play an important part in postoperative disturbances of water and electrolytic control. Cerebral arteriosclerosis with impaired circulation might predispose older persons to the development of the neurological symptoms of water intoxication.

Clinical Significance.—Weir and associates,[6] in 1922, were among the first to report the clinical significance of water intoxication. They were able to produce neurological symptoms in a patient who had diabetes insipidus by continuing the excessive intake of water after treatment with posterior pituitary extract. They also produced convulsive seizures in dogs by forced intake of water. McQuarrie,[7] in 1933, stressed the importance of electrolytes and water in the causation of convulsive seizures. It had been known for many years that dehydration and ketogenic diets aided in the control of epileptic seizures. In a series of clinical

studies, McQuarrie concluded that brain cells are oversensitive to dilution of extracellular fluids. Alterations in the permeability of cellular membranes associated with a shift of water and electrolytes are probably fundamental in the production of convulsions. Adams and associates [8] utilizing radioactive sodium in studies in which cocaine was used to produce convulsions noted a shift of water from the extracellular fluid into brain cells. They also expressed the opinion that this was an important part of the extremely complex mechanism involved in the production of convulsions. Ariel [9] observed 20 patients before and after operation to determine the effect of the administration of electrolyte-free infusions. He used only a 5% solution of dextrose in water and found that all patients retained a portion of the water. This retention of water, although transient, was quite pronounced in a few instances. Convulsive seizures without any localizing signs developed in three of Ariel's patients.

Preoperative medication, anesthesia, and surgical procedures decrease the body's capacity to secrete water. Talbot and co-workers [10] have shown that simple solutions of dextrose are likely to produce water intoxication in anyone if given more rapidly than at a rate of 3 liters per square meter of body surface area per 24 hours. When patients are given morphine or one of its derivatives, or barbiturates, the tolerance to a simple solution of dextrose may be reduced to slightly more than 1 liter per square meter per 24 hours. The addition of as little as 40 mEq. of total base per liter of dextrose solution greatly increases tolerance. Thus, it is apparent that water intoxication can be prevented by careful consideration and supervision of the postoperative administration of fluids. It might be asked whether these patients actually had cerebral thrombosis or hemorrhage in addition to water intoxication. This question deserves consideration, but the subsequent course of events, namely, complete recovery of the patients in a relatively short period merely by the restoration of normal extracellular tonicity, would militate against this diagnosis.

Summary

A study has been made at the Mayo Clinic of five cases in which overt neurological signs and symptoms associated with water intoxication and an unrecognized depletion of sodium developed during the immediate postoperative period. The pronounced improvement and the disappearance of neurological symptoms after administration of isotonic or concentrated solutions of sodium chloride produced a dramatic clinical response. The possibility of water intoxication and concomitant depletion of sodium should be considered in all patients in whom hemiplegia, convulsions, or coma develops during the postoperative period.

References

1. Zimmermann, B., and Wangensteen, O. H.: Observations on Water Intoxication in Surgical Patients, Surgery **31**: 654-669 (May) 1952.
2. Wynn, V., and Rob, C. G.: Water Intoxication: Differential Diagnosis of Hypotonic Syndromes, Lancet **1**: 587-594 (March 20) 1954.
3. Postinfusion Hypoglycemia, editorial, J. A. M. A. **160**: 876-877 (March 10) 1956.
4. Moore, F. D.: Low Sodium Syndromes of Surgery: Outline for Practical Management, J. A. M. A. **154**: 379-384 (Jan. 30) 1954.
5. McCance, R. A.: Experimental Sodium Chloride Deficiency in Man, Proc. Roy. Soc., London, s. B. **119**: 245-268 (Feb. 1) 1936.
6. Weir, J. F.; Larson, E. E., and Rowntree, L. G.: Studies in Diabetes Insipidus, Water Balance, and Water Intoxication: Study I, Arch. Int. Med. **29**: 306-330 (March) 1922.
7. McQuarrie, I.: Some Contributions of Biochemistry to Study of Epilepsy, J. Chem. Educ. **10**: 205-214, 1933.
8. Adams, J. E.; Aird, R. B., and Garoutte, W.: Fluid and Electrolyte Exchange in Brain in Experimental Convulsions, Tr. Am. Neurol. A. **77**: 34-38, 1952.
9. Ariel, I. M.: Effects of Water Load Administered to Patients During the Immediate Postoperative Period: Hypotonic Syndrome, A. M. A. Arch. Surg. **62**: 303-324 (March) 1951.
10. Talbot, N. B.; Crawford, J. D., and Butler, A. M.: Medical Progress: Homeostatic Limits to Safe Parenteral Fluid Therapy, New England J Med. **248**: 1100-1108 (June 25) 1953.

THE ROLE OR REHABILITATION IN A PROGRAM FOR HANDICAPPED CHILDREN

Helen M. Wallace, M.D., Jerome S. Tobis, M.D., Robert S. Siffert, M.D., Margaret A. Losty, R.N.
and
Caroline H. Elledge, M.S.W., New York

• Chronic disease is as important and rehabilitative programs are as necessary in children as they are in adults. There is reason to fear that children have sometimes been kept in institutions too long. The development of departments of physical medicine and rehabilitation, the use of consultants in this field, the multidisciplined approach, the integration of programs for children with those already existing for adults, and the facilities provided by recent federal legislation are significant steps toward the solution of this problem.

By and large, rehabilitation of the chronically ill has been most closely identified with the care of the adult. Younger persons with chronic illness, although a frequent subject for special types of care, have not generally been included in programs of rehabilitation. The advances made in the field of rehabilitation of the adult during recent years, partly as a result of the impetus of World War II experiences, are equally applicable to the handicapped child. In the broadest sense, rehabilitation is the process by which the patient may attain the maximum physical, psychological, social, educational, and vocational restoration in the community.

Recognition of the importance of rehabilitation in the care of patients with chronic illness has recently

Professor of Preventive Medicine and Public Health, New York Medical College (Dr. Wallace); Chief Medical Social Work Consultant, New York City Department of Health (Mrs. Elledge); Consultant in Physical Medicine and Rehabilitation (Dr. Tobis), Senior Orthopedic Consultant (Dr. Siffert), Coordinator, Hospital Consultation Program (Miss Losty), and formerly Director (Dr. Wallace), Bureau for Handicapped Children, New York City Department of Health.

Read before the Maternal and Child Health Section at the Annual Meeting of the American Public Health Association, Kansas City, Mo., Nov. 15, 1955.

occurred through the extension of two important pieces of federal legislation—the Hill-Burton Act and the Vocational Rehabilitation Act. The anticipated end-result of the extension of these two federal legislative acts will be the opportunity to provide well-constructed and well-equipped physical resources and to provide the many persons with professional skills necessary for the management, care, and rehabilitation of the patient's physical, vocational, social, educational, and psychological needs. Particularly because of these two acts, with their potential influence on patient care, personnel engaged in crippled children's programs have a unique opportunity to improve services for handicapped children. Perhaps the first question that comes to mind is: How can these newer concepts of rehabilitation be used and applied for the benefits of handicapped children? While the details may vary from community to community, depending on present local resources of personnel and physical facilities, certain principles can probably be laid down.

Employment of a Consultant

Just as it is important to have expert medical consultants, such as the orthopedist, ophthalmologist, and otologist, for each of the specialties involved in a handicapped children's program, it is important to employ a consultant in physical medicine and rehabilitation to outline and coordinate more modern concepts of rehabilitation. His role might include (1) evaluation of the physical medicine and rehabilitation services; (2) assistance in the development of physical medicine and rehabilitation services; (3) assistance in the development of standards for a department of physical medicine and rehabilitation in institutions; and (4) assistance in the training of personnel on the staffs of health departments, crippled children's agencies, and institutions in rehabilitation methods and techniques.

In New York City the handicapped children's program has employed such a consultant for the past two years. He has played a large role in educating the handicapped children's team in rehabilitation methods. He has evaluated departments of physical medicine and rehabilitation at the hospitals surveyed, he has consulted on special problems arising in the program in relation to physical medicine and rehabilitation, and he has participated in training programs and in hospital conferences in interpreting concepts of rehabilitation as they relate to the practical care of handicapped children. As rehabilitation becomes a larger part of the program, his role will increase. In fact, specialists in physical medicine and rehabilitation have been regular members of the orthopedic advisory committee to help the program in development and evaluation of these aspects of total care.

For example, in New York City, a recent survey of 24 hospitals caring for orthopedically handicapped children disclosed that 14 had a department of physical medicine and rehabilitation. Of the 14 hospitals with a department of physical medicine and rehabilitation, 8 were found to be well organized and equipped. Seven hospitals had a separate rehabilitation inpatient service, and eight had a separate outpatient service. In nine hospitals, the physical medicine and rehabilitation department staff had periodic staff conferences. Twenty-two of the 24 hospitals had at least one physical therapist, but 10 had no occupational therapist, 10 had no speech therapist, 8 had no psychologist, 6 had no teacher, and 21 had no recreation worker. In nine hospitals, medical rounds were made by a physiatrist; the visits varied in frequency from "daily" to "rarely." In 15 hospitals, no such rounds were made. It seems evident from this survey material that there is wide variation in the quality and quantity of physical medicine and rehabilitation services afforded orthopedically handicapped children. One of the major functions of the consulting physiatrist to the department of health has been to work with the hospitals to assist them with the further development of their services.

Rehabilitation Training Program

As in any new field, there is a certain body of knowledge developed and there are certain techniques used that may be helpful and that, therefore, should be disseminated to professional personnel working with patients. This is true for rehabilitation, and it applies equally well both to the staffs of institutions and to the staffs of crippled children's agencies and health departments. For example, from reports based on surveys of hospitals and convalescent homes in the metropolitan New York City area, children are being kept in institutions too long, and, in general, the program for children has not been one of active rehabilitation. Perhaps with the newer knowledge of rehabilitation techniques and the teaching of activities of daily living, such as feeding, dressing, toilet care, bowel and bladder control training, wheel chair transfer, ambulation, and gait training, these programs can become much more dynamic and positive for patient care. This same principle should be equally applied to patients at home who are visited by public health nurses, with the specific purpose of assisting the patient to develop maximum self-sufficiency wherever he is. Such a rehabilitation training program should, in our opinion, be developed on a multidisciplined team basis, for both the faculty and the trainees. One tangible plan might be that each health jurisdiction have at least one person, possibly a physician or public health nurse, who had had special training in the field and who would be the resource staff person for improvement in patient care in the specific field.

The field of physical medicine and rehabilitation is a new medical specialty that concerns itself with the care of children with neuromuscular and musculoskeletal disorders. This medical specialty, as does medicine generally in the care of the chronically ill, provides symptomatic treatment directed toward improving the function of the patient without influencing the underlying disease process. Thus it seeks to improve motor power whether the weakness results from a lower motor neuron disease, such as poliomyelitis, or an upper motor neuron disease, such as intracranial damage. In this field disease is looked upon as more

than the specific pathology and the social and psychological effects of the disability upon the total function of the patient are considered. Because all these factors and more must be considered in the total care of the patient, there are many disciplines involved in the rehabilitation of the handicapped child. The professional staff, including such specialists as the pediatrician, orthopedist, psychiatrist, ophthalmologist, neurologist, physical therapist, occupational therapist, psychologist, speech therapist, vocational or educational counselor, social worker, and nurse, functions as a team under the direction of the physiatrist. There is one additional unnamed member of the team whose participation is essential—the patient himself. By the very nature of rehabilitation care, the patient must be an active participant. In medical care of acute conditions, the success of treatment does not depend essentially upon the cooperation of the patient. If a child has pneumonia, the outcome will depend upon the diagnostic acumen of the physician, the efficacy of the antibiotic prescribed, and the nursing care given, not on whether the child is cooperative. But in rehabilitation, the success of treatment requires the active participation of the child because of two major factors: 1. Rehabilitation is primarily a learning or relearning process on the part of the patient—the learning of new and greater skills. 2. The necessary increase of motor power is dependent upon active exercises that the patient himself must perform.

Multidisciplined Approach

Rehabilitation of many handicapped children and adults usually requires a battery of skills as well as a large number of medical specialists in addition to the patient himself and his family. To produce a truly effective program that will result in the rehabilitation of the patient, these skilled persons must have an understanding of the contribution and role of each of the other professional groups and must be able to work closely together in order to provide the services the patient needs when he needs them. The multidisciplined approach should result not in a replacement of one type of professional worker by another but rather in a supplementation of one by the other. This should apply to the stage of the initial evaluation of the patient, periodic reevaluations, continuous supervision, and counseling of the patient and his family.

The paramedical members of this team have many roles, each of which complements the other. The physical therapist improves the patient's motor power by exercise, teaches ambulation, and applies physical modalities to relieve pain, reduce inflammation, and increase range of motion. The occupational therapist improves the dexterity and power of the patient's upper extremities by giving him meaningful work. She also teaches the patient self-care techniques, such as feeding and dressing himself. The rehabilitation nurse complements the role of the occupational therapist by continuing the self-care activities on the ward. The educational or vocational counselor evaluates the child's educational or vocational capacities and aptitudes and aids in the plans for his future training and study. The psychologist evaluates the child's intellectual and emotional profile and assists other therapists in creating the optimum conditions for the patient's learning of new techniques of rehabilitation. The speech therapist assists the child with speech and language disorders in order to help him attain his maximum potential. The social worker relates the family and home situation in the treatment planning. The group worker applies recreation programing as a physical and social therapeutic activity for the child. The teacher contributes to the over-all evaluation and educational goals of the child.

Integration with Adult Programs

Because of the country's aging population, chronic illness has become one of the major public health problems, and health departments are now planning and developing rehabilitation programs and services for adults with chronic illness. By and large, however, chronic illness does not magically begin at the age of 21 years. Many principles learned in the rehabilitation of handicapped children are equally applicable to adults, and many services developed for one age group can be and should be utilized and modified for the rehabilitation of the other age group. Services for the rehabilitation of handicapped children and adults must be coordinated and integrated. The artificial separation of the under 21 and over 21 age groups merely confuses community planning and results in duplication of efforts, funds, and services. Failure to apply the knowledge gained in one age group to the other age group causes repetition of errors in the trial-and-error method. It is important, therefore, that there be close integration of chronic disease rehabilitation programs and services for both children and adults.

Consideration of Long-Term Care

Rehabilitation of the handicapped child is frequently not accomplished on a short-term basis. As is true of any chronically ill patient, child or adult, long-term care is often essential. Frequently long-term care has meant for the child, at least, long-term institutional care. It should more properly imply the necessity of continuity of care, supervision, and rehabilitation wherever the child is—in an inpatient service, in an outpatient department, at home, in school, in job-training, or at camp. This principle of continuity of long-term care must include provision of the multidisciplined team in the various settings listed above as well as provision for flexibility for the easy flow of patients, when they are ready, from one setting to another and provision for the rapid interchange of full information from one setting to another. Otherwise, it is possible and probable that some patients will become fixed in one setting, which may be appropriate at one time but inappropriate at another time. It is also true that lack of interchange of information usually results in the expenditure of efforts and funds for duplicating evaluations. This may be discouraging to the patient and his family as well as being wasteful of the community's resources.

Evaluation of Results and Development of Priorities and Standards

The principle of evaluation of results is important for the individual patient, for the administrator of a crippled children's program, and for the director of any community service in future planning. Studies are necessary to develop even such basic data as the rehabilitation results in the individual patient for a given period of time, the most effective and successful techniques in certain types of disabilities, and the cost of rehabilitation per patient for each diagnostic group by individual institutions. Other such necessary studies include the duration of inpatient care and the reasons for prolonged inpatient stay; long-term longitudinal studies of the handicapped, comparing results in those who have had the opportunity for comprehensive rehabilitation care with those who have not; the results of prolonged inpatient care compared with an alternate community method, such as an organized home care program; the reasons for vocational success and failure among the handicapped in order to provide leads for further development of community services; and retrospective studies of adults who have been handicapped by conditions arising in infancy and childhood and who are now receiving public assistance. Such studies are essential if medical advances are to be made in improvement of methods and if fiscal authorities and the public are to be convinced of the value of rehabilitation programs.

In the early stages of any rehabilitation program, priorities must be established, since there are usually insufficient personnel and funds to serve all patients. The development of a priority system may be carried out on the basis of diagnosis or degree of disability. A priority list developed for one community will not necessarily be applicable in all phases to another community. The community's existing resources, available personnel, and public and professional interests are key factors in deciding any priority system. Also, carefully worked out standards are essential to serve as guides to participating institutions and agencies in their planning and developing good services. They will also be of help to accrediting groups in approving adequate acceptable services for a payment program.

Development of Community Services and Resources

In the development of community services and resources, a fairly complete knowledge of existing services and resources and of current gaps or lacks in patient care is necessary. This quantitive and qualitative knowledge should include such details as the hospitals and convalescent homes; the resources for the homebound group of children; the services provided for the children at school, especially the high priority groups in special classes or schools; the vocational resources, including sheltered workshops; the recreational programs; the transportation facilities; the long-term residential or custodial services; and the foster home and child welfare services. It is likely that in most communities at the present time "pieces" of services are now available and that undoubtedly there are many good or potentially good resources that can be further developed and improved with guidance, financial support, consultation, and patience.

Two examples will be used to illustrate this principle: the hospital resources and the convalescent resources. Once a knowledge of the hospital resources has been acquired, it is likely that it will be found that a minority of the hospitals have active and well-developed rehabilitation programs. The principles that might apply in such a situation are as follows: 1. General and not specialty hospitals would participate in the program in the beginning. 2. The initial selection would be of those hospitals that serve a teaching function in connection with medical and other professional schools, from the viewpoints of patient care, training of personnel, and research. 3. Diagnostic services on the one hand would be integrated with treatment and rehabilitation services on the other hand; this step might mean either the affiliation and joint staffing of detached diagnostic clinic services with hospitals or the physical relocation of detached diagnostic clinic services in hospitals with joint staffing. 4. There would be the development of a generalized rehabilitation program within the hospital. This program ideally would not be a completely separate one but would be one that would be closely integrated with other clinical departments so that rehabilitation techniques could be applied early; such a principle would apply to both inpatient and outpatient care. 5. There would be the development of certain specialized services in the hospital; for example, services for patients with hearing impairment, cleft palate, convulsive disorder, and mental retardation as well as for the traditionally accepted groups of patients, such as those with orthopedic, cardiac, and visual defects. 6. Assistance and guidance would be given to the hospitals in the recruitment of personnel, the training of personnel, and the development of program policies. 7. There would be continuity of care, including supervision and follow-up, between the hospital inpatient service and outpatient service and the home through the development of broad home care programs or the more limited public health nursing referral and follow-up.

The second example selected—that of convalescent care in the traditional convalescent homes—is more controversial and therefore more interesting. Once a working knowledge of the community's convalescent homes has been acquired, several principles might apply and a number of questions might be raised, such as: Is convalescent care as it has been traditionally given in the past necessary at the present time? What kinds of children are presently in convalescent homes, what are the reasons that they are there, and how many can be discharged home? Is a particular convalescent home fulfilling an essential community need at this time? Can a dynamic and active rehabilitation program be provided in a convalescent home currently located in a semirural setting, with its difficulties of recruitment and retaining of well-trained personnel,

of close medical supervision, and of parent visiting? What are the alternatives that a community might provide that might mean better and more prompt rehabilitation care, better psychological care, and possibly even lower cost to the community? What are the current facts about the present capacity, census, and length of stay in convalescent homes? The first essential principle that should apply to this somewhat controversial subject, in an effort to answer the foregoing questions, is that of fact-finding. Other principles, which undoubtedly fall into the general area of better coordinated and broader community planning of rehabilitation services, will stem from the original one of fact-finding.

Relationship to Newer Federal Legislation

Two types of federal legislation were extended recently that are of great significance to programs for handicapped children: (1) the Hill-Burton Act, which will make available new funds for construction and equipping of rehabilitation centers, diagnostic centers, chronic disease services, and nursing homes, in addition to the funds presently appropriated for general hospital construction; and (2) the Vocational Rehabilitation Act, which will make funds available for special projects, training of personnel, and research. It would seem essential that administrators and clinicians concerned with the program for handicapped children work closely with the state and local agencies responsible for the carrying out of new federal legislation because (1) personnel engaged in crippled children's programs already may have considerable knowledge about services and facilities currently provided and about unmet needs and (2) the new federal legislation provides a means of improving and expanding services for handicapped children. Joint planning is essential if the newly provided funds are to be used in the soundest way for the maximum number of people to be served. It would seem, too, that the crippled children's agency might provide the methods or means of bringing together the medical and health treatment agencies and the vocational agencies in any community. Up to the present time, in some communities, these two groups have not worked as closely together as they might, with a result usually to the detriment of disabled patients. On the one hand, some medical treatment agencies know of and render medical and health services to large numbers of patients without significant awareness of their vocational needs and without early referral for vocational guidance, testing, training, and placement. On the other hand, some vocational agencies are currently in the position of offering vocational assistance without adequate knowledge of the medical status and functional ability of the individual patient. Liaison between these two types of community agencies is essential, and a crippled children's program might serve in such a coordinating capacity.

Purchase of Care

Rehabilitation of patients is costly; for example, the per diem cost of inpatient care in a large rehabilitation service in New York City is $25 for a child and $30 for an adult. Even though there is a considerable amount of funds available for the rehabilitation of patients, from both official and voluntary sources, funds will always be wanting. These two sources of funds, official and voluntary, should not be looked upon as competitors of each other; both are essential. This principle can work in a variety of ways, such as by grants to agencies or services, complete payment of salaries, joint payment of salaries, purchase of equipment, research projects and experimentation, and training of personnel. The important principle is that the two major sources of funds work together to develop rehabilitation services as rapidly as possible with well-trained personnel wherever they are needed. The second principle is that of the purchase of care on a cost basis. If one accepts the fact that rehabilitation is economically sound as well as socially desirable even though it is costly, then someone must be prepared to pay the bill. Logical sources, in addition to the patient and his family, are the categorical voluntary agencies and governmental agencies, including the crippled children's program. It is a fallacy that by paying less than cost, if cost is calculated on a sound formula, one is saving money. If the cost of care is not met in some way, then services are automatically decreased by reduction of personnel. This means that some essential services will not be provided and that rehabilitation may not be as effective or as complete. In any event, by not meeting the costs of rehabilitation, it is the patient and the community who "pay the price"; and the principle of purchase of care on a cost basis is a vital one.

Summary

Some principles in the possible role of rehabilitation in services for handicapped children may be based on experience in a large crippled children's program in an urban area. These principles include the employment of a consultant in the field of physical medicine and rehabilitation as a staff member of the crippled children's agency, the need for the establishment of a training program in rehabilitation to disseminate the newer knowledge developed in the field to personnel working directly with patients, the use of the multidisciplined team approach to meet the broad needs of the patients, and the need to integrate rehabilitation services for children with those for adults. It is necessary to recognize the need for long-term follow-up and supervision of patients and for flexibility of services and policies. Evaluation of results of services to the individual patient is important, and methods for such evaluation must be devised. Additional principles are those of development of knowledge regarding present resources and currently unmet needs of patient care and purchase of care on a cost basis. Newer extensions of federal legislation, such as the Hill-Burton Act and the Vocational Rehabilitation Act, provide excellent opportunities to develop, expand, and improve services for patients with chronic illness, both children and adults.

125 Worth St. (Dr. Wallace).

CLINICAL NOTES

SERUM PROTEIN CHANGES IN SUBACUTE THYROIDITIS

Grant N. Stemmermann, M.D., Hilo, T. H.

Subacute thyroiditis is an inflammatory disease involving the thyroid gland but associated with a systemic reaction characterized by fever and general malaise. A large number of papers upon this subject have appeared within the last decade. Recently these have been summarized in a complete review undertaken by Hazard.[1] It is my purpose to describe a laboratory finding in this disease, mention of which I have not encountered in the medical literature available to me. This consists of a striking elevation of the alpha-2 component of the globulin fraction of the blood. I shall describe two cases in which this change was noted and shall attempt to explain the cause of this change, correlating it with other reported findings.

Report of Cases

CASE 1.—A 47-year-old Caucasian man first became ill on Sept. 1, 1955. His initial symptoms were general malaise and weakness after vigorous walking. He also had a low-grade afternoon fever (99.6 F [37.6 C]) followed by sweating. He also complained of a mild sore throat, which varied in intensity from time to time. Ten days later he developed a hard, tender mass at the lower anterior margin of the right sternomastoid muscle. He was admitted to hospital on Sept. 18, 1955. His medical history and family history contained no facts related to the present illness. Physical examination on admission revealed the tender mass in the area of the right lobe of the thyroid gland to have subsided and to have been replaced by a similar mass in the region of the isthmus.

Laboratory findings were as follows. Urinalysis was negative for sugar and albumin. The specific gravity was 1.020, with 3 white blood cells per high-power field. The nonprotein nitrogen level was 32 mg. per 100 cc.; total protein level was 7.4 gm. per 100 cc., with albumin 4.8, globulin 2.6, and albumin-globulin ratio 1.85. The white blood cell count was 11,800 per cubic millimeter, with 69% neutrophils and 31% lymphocytes; hemoglobin level was 12.4 gm. per 100 cc. and hematocrit 42%. The erythrocyte sedimentation rate was 48 mm. in one hour. The serologic test for syphilis was nonreactive, and the cholesterol value was 157 mg. per 100 cc.

A needle biopsy of the thyroid tissue revealed the basic architecture to be considerably disturbed. The follicles were decreased in number and widely separated from one another by an edematous connective tissue. Within this tissue were many lymphocytes, plump fibroblasts, and collagen fibers. Within some of the follicles were collections of neutrophils. Others were partially bordered by epithelioid cells and Langhan's-type giant cells, forming a tuberculoid focus. Some of these collections enclosed small amounts of persisting colloid. This patient's symptoms abated spontaneously without specific therapy.

CASE 2.—A 40-year-old man of Japanese origin was well until early November, 1955, when he noticed that he had a fever. His temperature was 104 F (40 C). He received some unidentified medication from a physician, but there was no improvement in his febrile disease. His only symptom other than the fever was slight pain in the throat when this region was pressed. He denied having any cough, shortness of breath, nausea, or vomiting. His medical history and family history were of little interest insofar as the present disease was concerned. On physical examination he was found to have slight injection of the tonsillar area. He also had a slightly enlarged and tender right lobe of the thyroid gland.

The laboratory findings were as follows. The white blood cell count was 7,700 per cubic millimeter, with 66% neutrophils, 22% lymphocytes, 10% monocytes, and 2% eosinophils. The hemoglobin level was 14 gm. per 100 cc., and the hematocrit was 45%. The erythrocyte sedimentation rate was 32 mm. in one hour. The findings on urinalysis were specific gravity 1.016, albumin and sugar negative. No cells or casts were seen. Prothrombin time was 53% of normal. The total protein value was 8 gm. per 100 cc., with albumin 3.7, globulin 4.3, and albumin-globulin ratio 0.86. The serologic test for syphilis was nonreactive. Blood cultures were repeatedly negative, and heterophil agglutination was positive through 1:8 dilution.

A needle biopsy of the thyroid gland was done, and microscopic examination revealed many of the follicles to be distorted. Some contained mixed neutrophils, monocytes, and colloid. The lining epithelium of these follicles persisted, but there were others in which the process just described had progressed to the extent that no epithelium was any longer seen. In the latter areas the collections of neutrophils were surrounded by palisaded epithelioid cells. The interstitial connective tissue was increased in amount and contained collections of lymphocytes, monocytic cells, and neutrophils. This patient's signs and symptoms promptly abated under cortisone therapy.

Pathological Changes

The pathological changes noted within the glandular tissue were typical of those reported by other authors. A wide variety was noted in the appearance of the individual follicles. The earliest change consisted of the accumulation of a few neutrophils within the colloid. These elements were surrounded by persisting colloid, and the follicular epithelium remained intact. In other follicles the epithelium was replaced by dense masses of neutrophils and monocytic elements. Where this change was most intense, segments of the follicular basement membranes were destroyed. In other areas collections of colloid were surrounded by histiocytic elements and giant cells of the Langhan's type. The histiocytic cells had a palisaded arrangement. The interstitial connective tissue was edematous and increased in amount. It contained collections of lymphocytes, neutrophils, plasma cells, monocytes, occasional giant cells, and fibroblasts.

Laboratory Findings

There was a striking increase in the alpha-2 globulin fraction as seen by the paper electrophoresis method. This distortion of the protein pattern accompanied a normal albumin-globulin ratio in one case and an inverted one in the other. This reversal was due to an increase of the globulin fraction as a whole rather than the decrease in the albumin portion. Furthermore, there was an increase in both the beta and the gamma fractions as well, although the latter change was not so striking as that seen in the alpha-2 fraction. The alpha-2 fraction appeared to migrate in a slightly faster range than the normal alpha-2 fraction.

Comment

These findings are of particular interest when they are compared with other changes noted in this disease. It has been reported that during the active phase of the disease there is a strikingly negligible uptake of radioiodine (I^{131}) and a definitely elevated serum protein-bound iodine value.[2] It has been felt that the elevation of the protein-bound iodine level was the

From the Laboratory, Hilo Memorial Hospital.

result of follicular destruction and the absorption of colloid into the blood stream. This concept would seem to be confirmed by the change in the electrophoretic pattern of the blood proteins. A recent study by Shulman, Rose, and Witebsky[3] is pertinent in this regard. These workers studied the electrophoretic patterns of material obtained from hog thyroid glands. They noted that the thyroid extract revealed essentially a single component, moving with a mobility slightly greater than that of hog alpha-2 globulin. They felt that this component was thyroglobulin.

These findings are of both practical and academic interest. It has been said that the only laboratory tests of value in the diagnosis of subacute thyroiditis are the determinations of protein-bound iodine and the uptake of the thyroid gland of I^{131}. In communities where neither of these examinations is available due to space or budget limitations, the electrophoretic pattern, obtained with simple equipment, may indicate that this disease is present. This is an important factor in some cases that present themselves to the physician as a fever of unknown origin. In the second case mentioned in this study the tenderness in the thyroid gland was so slight that no biopsy would have been made of the gland if the protein changes had not been known. The test would not be specific, since in any condition allowing the escape of follicular contents into the bloodstream there might be expected to be a high alpha-2 globulin value. For instance, Flynn[4] reports an increase in the fraction in a case of carcinoma of the thyroid, but the absence of systemic complaints should allow differentiation from thyroiditis. Isolated alpha-2 globulin elevation may also be seen in the nephrotic syndrome, but the wide difference in clinical appearances between this disease and thyroiditis should permit no confusion. In addition, the elevated fraction in the renal disease migrates in a slower range than that seen in thyroiditis, sometimes appearing to blend with the beta fraction.

Summary

In two cases of subacute thyroiditis an elevation of the alpha-2 globulin fraction was noted by the paper electrophoretic technique. This change is felt to be due to escape of a colloid into the bloodstream as a result of structural distortion of the follicles.

Addendum

Since this paper was submitted for publication, two additional cases of thyroiditis have been seen in which the above protein changes were found to be present. One of these was of special interest because the changes were not present during a four-day prodromal period of fever but were only noted after the patient's thyroid became tender.

References

1. Hazard, J. B.: Thyroiditis: A Review, Part 2, Am. J. Clin. Path. 25: 399-426, 1955.

2. Lindsay, S., and Dailey, M.E.: Granulomatous or Giant Cell Thyroiditis: A Clinical and Pathologic Study of 37 Patients, Surg. Gynec. & Obst. 98: 197-211, 1954.

3. Shulman, S.; Rose, N. R., and Witebsky, E.: Studies of Organ Specificity: 3. Ultracentrifugal and Electrophoretic Examinations of Thyroid Extracts, J. Immunol. 75: 291-300, 1955.

4. Flynn, F. V.: Electrophoretic Patterns of the Serum Proteins in Health and Disease. Proc. Roy. Soc. Med. 47: 827-831, 1954.

HYALURONIDASE AS AN ADJUVANT IN INSULIN SHOCK THERAPY

Milo Tyndel, M.D., Ph.D., Brandon, Manitoba, Canada

Extensive studies have been performed and reports published during the last few years concerning the biochemical, physiological, and therapeutic actions of hyaluronidase, the most important of the "spreading factors." Very few of these studies have been concerned with the use of hyaluronidase as an aid to insulin shock therapy with regard to decreasing the amount of insulin necessary, accelerating the evolution of comas and thus increasing the period of actual treatment, and avoiding its untoward effects, particularly the so-called after-shocks. Although the value of insulin shock therapy is still controversial, this therapy continues to be widely used in mental hospitals throughout the world for the management of schizophrenia and other psychiatric disorders. Therefore, every method leading to possible technical improvements in the administration of this therapy is welcome and should be given attention.

Reports on the use of hyaluronidase in insulin shock therapy have been published by Straccia and Scheflein,[1] Demay, Mises, Bories, and Chanoit,[2] Gysin and Wilson,[3] and Greenbank.[4] During my investigations, started at the Hospital for Mental Diseases in 1955, I confirmed the favorable reports of these authors and made some observations not published hitherto. Since I consider these observations useful for the routine application of insulin shock therapy, I shall briefly outline the findings.

Material and Method

In the investigations hyaluronidase was first used in dissolved form (Wydase). A milky turbidity was noticed when this was mixed with insulin. Since the supplier of the hyaluronidase notified me that the same turbidity has been observed with some types of insulin in other clinical investigations, I changed to the lyophilized form, which showed less tendency to cloud when mixed with insulin. However, it was found that the cloudiness did not have any significant untoward effect on either the insulin or the hyaluronidase. As to the dose of hyaluronidase added to the insulin, Gysin and Wilson found 75 turbidity-reducing units (T.R.U.) to be the most efficient. I tried to find the optimum dosage by adding from 25 to 150 T.R.U. Doses smaller than 75 T.R.U. appeared definitely insufficient to influence the structure of comatose reactions to insulin. Doses up to 150 T.R.U. did not seem to be more efficient than 100 T.R.U. I felt that 100 T.R.U. could be considered the optimum dosage, although the difference in action between 75 and 100 was not considerable. This optimum dosage was found irrespective of the amount of insulin administered. In my investigations I used lyophilized hyaluronidase in 10-cc. vials containing 1,500 T.R.U. I dissolved this powder in 15 cc. of isotonic sodium chloride solution, each cubic centimeter containing 100 T.R.U.

From the Hospital for Mental Diseases. Dr. Tyndel is now at Misericordia General Hospital, Winnipeg, Canada.

Results

No untoward local or systemic effects were noticed during the period of the investigation (five months). I administered hyaluronidase to 37 patients suffering from schizophrenia and other psychiatric conditions requiring either insulin shock therapy or modified insulin shock therapy. The number of hyaluronidase injections was about 1,000. As is usual in insulin shock therapy, the injections were given deeply intramuscularly. As controls for our investigations I used 13 patients who were given insulin shock therapy without hyaluronidase. The entire group of patients to whom hyaluronidase had been administered served as another control. By stopping the administration of hyaluronidase once for two days and much later for another four days I was able to observe the obvious differences regarding the depth of hypoglycemic reactions without having changed the dosage of insulin. Patients who had reached a coma level with hyaluronidase over many days of treatment dropped down to semicoma level immediately after withdrawal of hyaluronidase; other patients who had reached a semicoma level were able to take their feedings by mouth. The table gives a good picture of this difference.

Depth of Hypoglycenic Reactions

	Without Hyaluronidase	With 100 T.R.U.* of Hyaluronidase
Comatose	...	10
Semicomatose reactions	8	3
Oral feedings	5	...
Total	13	13

* T.R.U., turbidity-reducing units.

By the administration of hyaluronidase I was able to decrease the coma doses of insulin by a considerable amount. Before hyaluronidase, 7 of a group of 13 patients required doses higher than 300 units of insulin daily (up to 600). In the same group only three patients required doses higher than 300 units of insulin (up to 440 in one case only) when 25 to 75 T.R.U. of hyaluronidase were administered, and only one patient in the same group required doses higher than 300 units of insulin (up to 350) when 100 T.R.U. was administered. The average total dose of insulin administered on one of the insulin shock therapy wards in the hospital, calculated on the basis of the amounts received by 13 male patients over the first six months of 1955, was 4,400 units. After the routine administration of hyaluronidase, the average total dose of insulin on the same ward dropped to 2,200 units per week. Without hyaluronidase, the average coma dosage of insulin given to a group of 13 patients was 365 units; with hyaluronidase this dosage dropped to 212 units.

There are considerable variations in the decrease of insulin made possible by the administration of hyaluronidase; however, in my series I did not find any patient whose condition seemed completely refractory to hyaluronidase. In two patients who had had a course of insulin shock therapy on a previous occasion, the average dose of insulin required to obtain a coma level was 80 units with hyaluronidase as compared to 160 units during their former course. In two patients showing a marked tendency to spasticity and cyanosis with doses of 400 and 500 units without reaching a semicoma level, I was able to obtain semicomatose reactions with much greatly lessened degrees of spasticity and cyanosis at doses of 200 and 320 units respectively.

The average monthly number of comatose reactions in a group of 12 patients not receiving hyaluronidase was 77; with hyaluronidase this number was increased to 120. The time elapsing between the injection of insulin and the initial shock signs was shortened by about one-third (from an average of 100 minutes to about 70 minutes), thus increasing the duration of the semicoma. Taking the number of 50 reactions (including comatose, semicomatose, and convulsive responses) as the routine figure for a complete course of insulin shock therapy, without hyaluronidase the course used to require an average of 61 days of treatment. With the addition of hyaluronidase this period was reduced to an average of 55½ days.

In addition to the findings listed above, I would like to mention the following observations made during my investigations. During the early phases of shock there appeared to be a lesser tendency to hyperactivity and apprehension. The patients appeared quieter and showed less tendency to complications (e. g., respiratory difficulties) during both coma and semicoma levels and they appeared much less exhausted. The acceleration of the pulse rate appears considerably decreased when hyaluronidase is used. Whereas I used to notice pulse rates from between 100 to 140 per minute, the average pulse rate dropped to 90 to 100, and pulse rates over 100 were rarely found. With the use of hyaluronidase the average number of semicomatose and comatose reactions on Mondays, after the two-day weekend break, or after breaks for other reasons, showed a considerable increase. The decreased insulin dosage permits reduction of 1 oz. (30 cc.) of glucose for every 20 units of insulin. The average reduction of glucose feeding required per patient was 6 oz. (177 cc.) per day.

During the whole period of five months after the start of the investigation on hyaluronidase, there were no after-shocks in the afternoons and evenings of the treatment days. Without the use of hyaluronidase there were usually up to 4 out of a group of 13 patients who showed signs of after-shock on Mondays and 1 to 2 per day on the following four treatment days. Prior to use of hyaluronidase it had been my practice to give a feeding of 5 to 8 oz. (148 to 237 cc.) of glucose routinely at 1:30 p. m. After using hyaluronidase I discontinued this feeding without seeing any signs of after-shock. In a group of 13 patients the average reduction of glucose amounted to 100 to 120 oz. (2,957 to 3,549 cc.) per day.

It is felt that through the acceleration of metabolic changes due to the use of hyaluronidase the tendency to convulsions has decreased, although it is difficult to assess this finding with any accuracy. There were some noticeable changes in the patients' behavior and feelings during the afternoon and evening periods. The patients appeared more alert and less sluggish and apathetic. They were more active in participating in

ward and hospital activities. They did not complain about feelings of fulness, and at the same time fewer patients were nauseated and vomited and therefore were better able to take noon meals and lunches without any persuasion.

Comment

Hyaluronidase has a definite action in reducing the resistance of tissues to diffusion and absorption of injected fluids. This applies also to insulin given intramuscularly for the shock therapy of schizophrenia and other psychiatric disorders. In my investigation about 1,000 injections of lyophilized hyaluronidase ranging from 25 to 150 T.R.U. were added to insulin in a group of 37 psychiatric patients. The addition of hyaluronidase to insulin has proved to be a valuable adjuvant to insulin shock therapy by (*a*) reducing the amount of insulin required to produce semicomatose and comatose reactions, (*b*) increasing the effective length of treatment levels, (*c*) eliminating the danger of after-shocks, (*d*) increasing the number of therapeutically valuable reactions, (*e*) decreasing untoward symptoms and signs due to feeding of glucose, (*f*) decreasing the tendency toward convulsions as well as toward restlessness and exhaustion, and (*g*) decreasing untoward strain on the vascular and respiratory systems. The optimal dose of hyaluronidase has been found to be 100 T.R.U., irrespective of the dose of insulin. No untoward local and systemic effects have been noticed. From an economic viewpoint, the savings in insulin and glucose as well as in days of treatment required for a full course of insulin shock therapy make up for the additional expense of the hyaluronidase.

Summary

Investigations carried out on 37 psychotic patients undergoing insulin shock therapy show that hyaluronidase (Wydase) is a valuable adjuvant to this treatment in improving its action and reducing its dangers and side-effects; it is also economical. The use of this modification of routine insulin shock therapy can be recommended safely.

John Wyeth and Brother (Canada) Limited supplied the hyaluronidase (Wydase) used in this study.

References

1. Straccia, F. A., and Scheflein, A. E.: Hyaluronidase as Adjunct in Insulin Coma Therapy, Am. J. Psychiat. **108**: 702-703 (March) 1952.

2. Demay, G.; Mises, R.; Bories, J., and Chanoit, P.: Association de l'hyaluronidase a l'insuline dans la cure de Sakel, Ann. méd.-psychol. **111**: 339-342 (Oct.) 1953.

3. Gysin, W. M., and Wilson, J. L.: Hyaluronidase in Insulin Coma Therapy, Dis. Nerv. System **15**: 138-141 (May) 1954.

4. Greenbank, R. K.: New Aid to Insulin Coma Therapy, Psychiat. Quart. **28**: 395-397 (July) 1954.

Anticoagulant Therapy.—An interrupted schedule of administering maintenance doses of warfarin sodium every third or fourth day has been tried and appears not to be satisfactory in view of the wide fluctuation of prothrombin levels. Administration of warfarin sodium guided by the day's prothrombin determination would seem to be the best method, and, if a pattern is established, the prothrombin determinations safely can be reduced in frequency. Individual dosage requirements vary widely, but for the majority, after an initial dose of 75 mg., daily or every-other-day doses of 12.5 mg. will satisfactorily maintain a proper hypoprothrombinemia.—D. V. Clatanoff, M.D., and O. O. Meyer, M.D., Further Observations on Use of Warfarin Sodium in Anticoagulant Therapy, *A. M. A. Archives of Internal Medicine*, June, 1956.

SPECIAL ARTICLE

DEFENSIVE ASPECTS OF BIOLOGICAL WARFARE

Arnold G. Wedum, M.D., Frederick, Md.

The offensive potential of biological warfare has created public health problems that were not known 10 years ago. For example, the vulnerability of the human respiratory tract as an avenue for infectious aerosols[1] dictates serious attention to the problems associated with the pathogenesis of diseases that can be produced by such means. It follows that the effectiveness of our antibiotics, vaccines, and toxoids will not be fully known until they are evaluated by respiratory challenge of animals or man. This is the most important thought that I wish to emphasize.

In the medical literature there are adequate reports of instances in which the number of organisms required to infect and the effectiveness of therapy in a given disease are significantly different when an animal is inoculated by different routes.[2] For instance, infection of the lung with Streptococcus or with the anthrax bacillus is a much more severe disease than infection of the skin. There is some experimental evidence that the inhalation of infectious particles with diameters of 1 to 5 μ produces a disease that is different and usually more severe than that produced by other means of inoculation.[2] Therefore, I wish to point out specific areas in which test by respiratory challenge is important.

Chemoprophylaxis

First, in regard to the possible value of chemoprophylaxis, the questions of whether antibiotics should be stockpiled and whether they should be made available for chemoprophylaxis, or only for therapy, are serious economically.[3] Consequently, the effectiveness of chemoprophylaxis needs critical examination in the case of each infectious micro-organism. For instance, chemoprophylaxis in malaria is well established, but Ley[4] has reported on its limitations in tsutsugamushi fever (scrub typhus). At Camp Detrick we have several times used prophylactic drugs immediately after laboratory accidents with infectious cultures. Illness has not always been prevented.

It is desirable to know the magnitude of the respiratory challenge against which administration of an antibiotic would protect. The concentration of any dispersed infectious aerosol would not be uniform everywhere, so there would be a significant variation in the respiratory dosage. Examination is needed of other variables and alternatives, such as (1) effect of length of time between inhalation of the organisms and start of administration of the prophylactic drug; (2) value of preexisting immunization; (3) simultaneous immunization and chemoprophylaxis (In this connection, experiments by Henderson[5] showed that monkeys chal-

---

Safety Director, Camp Detrick.

Read before the Research and Development Section, American Drug Manufacturer's Association, Homestead, Va., Nov. 10, 1955, and the Chemical Specialties Manufacturers Association, New York, Dec. 7, 1955.

lenged with aerosols of Bacillus anthracis could be protected by use of penicillin only as long as it was continued. When therapy was discontinued on the fifth day after challenge, a large proportion of the animals developed typical anthrax and died. However, if the animals were actively immunized during chemoprophylaxis, use of the antibiotic could then be discontinued and the animals survived); (4) importance of drug-resistant strains (In some instances, the bacteria may be resistant to the most effective drugs)[1e]; and (5) duration of prophylactic treatment and daily dosage necessary to prevent relapse, to minimize development of drug-resistant strains, and to erradicate foci of organisms in the body that would otherwise reestablish the disease when the patient was subjected to stress. As an example of this last problem, at the Camp Detrick laboratories, Dr. Henry Eigelsbach found that mice challenged with Pasteurella tularensis and treated for 21 days with streptomycin were apparently cured, but, when put under conditions of stress, such as extreme changes in temperature or vigorous exercise in the metabolism cage, they relapsed into active infection and died. These problems need better solutions than are now available before the prophylactic administration of drugs can be recommended.

Treatment

Our knowledge is defective in the second area, therapy of the established illness. Almost all the questions arising in connection with chemoprophylaxis recur in considering therapy. In addition, there is another problem that is coming to the fore, namely, that of the systemic toxicity that continues despite death of the bacteria. There is increasing recognition of diseases in which death of the patient may occur, even though the causative bacteria cannot be isolated at autopsy.[6] In other words, administration of large amounts of an antibiotic virtually sterilizes the patient, yet the toxins or toxic processes established by the bacteria produce a bodily change that results in death. There is a span of time during which the causative organism cannot be isolated from the living patient, and, somewhere in this period, there is a point before which death can be averted but after which death is inevitable under present conditions of available therapy. This is the "point of no return."[7] This point of no return is new only in that experience with antibiotics has allowed us to recognize it.

This phenomenon therefore calls for increased attention to the nonspecific factors that affect immunity. These have been reviewed recently by Nungester.[8] In particular, there is need for attention to possible neutralizers of the toxic products resulting from microbiological invasion. These toxic products may be the critical factors in the new point of no return. In addition to the well-known exotoxins of the bacilli causing diphtheria, tetanus, and botulism, there have been significant toxins derived from other bacteria[9] and from the viral-rickettsial group.[10] It is significant that chlortetracycline has a neutralizing effect on rickettsial toxins.[10] One of the latest is a toxin from the anthrax bacillus, formed only in vivo and associated in a curious and yet not completely known fashion with the anthrax-immunizing antigen.[6a] These considerations lead me to recommend increased emphasis upon study of the toxic processes that occur during acute infections, so that rational procedures may be devised for therapy in cases that are too far advanced to be controlled by use of antibiotics alone.

Antiserum

Our defenses are also weak in the third area, antiserums for diphtheria, tetanus, and botulism. It seems clear that supplies of equine antiserum cannot be produced or stockpiled in quantities adequate for even a moderate outbreak of illness caused by widespread dissemination of the organisms or their toxins. In view of the great advances in chemistry in the past 50 years, it should be possible to develop a chemical neutralizer for these toxins that would remedy this situation. The value of antiserum in the treatment of disease produced by aerosol-disseminated toxin has not been critically examined.

Rapid Laboratory Diagnosis

The fourth area in which respiratory challenge is important, rapid laboratory diagnosis, is a very important consideration in the treatment of infectious disease. The pharmaceutical industry has always been active in this field, and excellent improvements have been made. The Camp Detrick laboratories also have a comprehensive program on rapid detection, with emphasis upon examination of all possible avenues of approach. Extensive use is being made of contracts with private and public medical laboratories and of cooperation with the United States Public Health Service. Some of the interesting methods being examined for potential usefulness are rapid biochemical and bacteriophage techniques, slide agglutination, substrate utilization techniques, and infrared spectrophotometry. The results of these investigations will be made public, in accordance with the Department of Defense policy of releasing medical information pertaining to prevention, diagnosis, and treatment. A paper has already appeared on infrared spectrophotometry.[11]

Vaccines

Vaccines and toxoids constitute the fifth area in which the concept of respiratory challenge is important. This is where probably the best progress is being made, in terms of value to public health practice. The Civil Defense Administration has pointed out,[1a] "Active immunization offers by far the most effective form of civil defense against biological agents for which vaccines are available." Here we are confronted with the fact that a vaccine that will protect against intraperitoneal challenge will not necessarily protect to the same degree against respiratory challenge.[12] Therefore, it would be best to make sure that the vaccine produces respiratory immunity. As in chemoprophylaxis, it would be well to determine the degree of immunity in terms of resistance to an increasing number of organisms.

Another sort of problem is posed by diseases such as tuberculosis in which previous infection or immunization produces a state of hypersensitivity to the causative agent or its products.[13] Immunization might

cause such a reactive state that respiratory contact with a large amount of infectious agent could induce a more severe disease than in the absence of immunization. Investigation of this possibility and of therapeutic procedures in hypersensitive reactions of this sort might prove worthwhile.

In this matter of vaccines, I should like to make two recommendations. The first concerns the possibility that an effective immunizing antigen may be present in the culture filtrate when the killed bacterial cells themselves have little or no immunizing activity. Anthrax has become the classic model for this situation. The presence of immunizing antigen in the edematous fluid of anthrax lesions has been known for many years. More recently, Gladstone[14] demonstrated that this antigen was elaborated in vitro when B. anthracis was grown in plasma under particular conditions. Subsequent investigations have been carried out in the Camp Detrick laboratories by Dr. George Wright and his collaborators.[15] In brief, it has been possible to produce the antigen in chemically defined, nonprotein mediums, and alum precipitation of the sterile culture filtrate has yielded a stable and acceptable product that produces effective immunity in a number of animal species. Evidently elaboration of the antigen is associated with a particular kind of metabolic activity of the organisms; many mediums may be devised that support excellent growth, but in which elaboration of antigen cannot be detected. We do not know the extent to which other infectious organisms may behave in an analogous way, but it would seem that the concept of a filterable antigen formed under particular conditions of growth may be a promising approach to the development of vaccines for diseases for which there is now no adequate immunizing substance.

The second recommendation relates to the potentialities of combined vaccines. It is realized that vaccines are not available for all infectious diseases and that there are other difficulties. However, these disadvantages become less important if a standard vaccine already in use by civil or military authorities is combined with vaccine for diseases less prevalent but more severe. It is proposed that such prototype combinations be made, tested, standardized, and adapted to commercial production and the technical directions for preparation be pigeonholed for possible future need. As new vaccines are developed in Camp Detrick laboratories or elsewhere, they will be brought into this plan. We are at present engaged in a small program of this kind. This, of course, is just an extension of a trend in vaccines for preventive medicine that has been present for some time but that, if accelerated, would be more valuable. The combined vaccines used in pediatric practice have been well received by doctors and patients, and the combined typhoid-paratyphoid A and B and cholera vaccine is of long standing. Successful use of the combined immunizing antigens for typhoid, paratyphoid A and B, tetanus, and diphtheria has been reported.

Combination of living vaccines may be more difficult, but it is encouraging that the combined living yellow fever and smallpox vaccines have been used successfully in man.[16] It is desirable that exploratory combinations be made with others, such as the living Rift Valley fever vaccine[17] and the chick-embryo rabies vaccine,[18] in order to determine existence of potentiation or interference. Such studies as this have been made recently with combined living dengue and yellow fever vaccines.[19] Combination of living bacterial vaccines appears to be an unexplored field.

A major obstacle to critical examination of the usefulness of living or killed vaccines has been the reluctance to inoculate man with living vaccines or to test his immunity by challenge with living organisms. An indirect benefit of the trials in Nuremberg, Germany, to the medical profession has been that the conditions justifying the use of man in medical experimentation have been accurately defined.[20] A nonexhaustive survey of the literature shows that man has been inoculated with living vaccines for plague,[21] tsutsugamushi fever,[3] typhus,[22] poliomyelitis,[23] tularemia,[24] dengue,[19] tuberculosis (BCG vaccine), rabies,[18] Colorado tick fever, infectious hepatitis, influenza, and mumps,[25] in addition to the standard living vaccines for smallpox and yellow fever. Furthermore, the natural or acquired immunity or response to therapy of man has been challenged with the living micro-organisms of malaria,[26] typhus,[22] brucellosis,[27] syphilis,[28] tsutsugamushi fever,[29] dengue,[30] and yellow fever (classic) and the virus of serum hepatitis.[31]

Very little has been done by way of respiratory challenge of man with micro-organisms, although cautious experiments have been done with gases, especially in the testing of gas masks. In some instances, adequate evaluation can be obtained in no other way, despite extensive experimentation in animals. Some of the important reasons for the absence of the use of respiratory challenge in microbiological experimentation are the complexity, cost, and infectious hazards associated with the necessary aerosol-exposure equipment.

Means of Respiratory Challenge

The Reyniers exposure chamber[2b] and various modifications thereof are suitable for exposure of laboratory animals and for study of basic problems of size, dispersion, and stability of aerosolized particles. However, its construction is elaborate and its operation difficult, so that a large operating and supporting staff is necessary.

Fortunately much excellent work can be done with simpler equipment.[2a] A device that has been very useful to us is an animal exposure tube known as the Henderson apparatus, developed by Dr. David Henderson and associates of Porton, England. The design drawings and working directions can be made available to qualified organizations. I should like to see this equipment put into use in the research laboratories of our medical schools and pharmaceutical firms. It is desirable that some mechanism be provided so that it can be given to selected academic institutions. I do not believe respiratory disease can be properly studied with infection by intraperitoneal injection or intranasal instillation. The Henderson apparatus can provide rather accurate respiratory dosages under controlled conditions. The English workers use it on an open bench and wear gas masks and other protective clothing. One small well-trained group has done this successfully for four years without infection despite considerable work with Past. tularensis. I prefer that it be

enclosed in a ventilated safety cabinet and then masks worn or not, depending upon the organism in use and the state of immunity and therapy.

Summary

Study of the significance to public health of the respiratory route of infection has revealed problems in the pathogenesis, prophylaxis, and therapy of respiratory disease that can be adequately examined only by experimental respiratory challenge. These examinations have yielded, and will continue to yield, advances in medical science for the benefit of all mankind.

205 W. College Terrace.

References

1. (*a*) United States Civil Defense: Health Services and Special Weapons Defense, publication AG-11-1, Federal Civil Defense Administration, December, 1950. (*b*) Haas, V. H.: Medical Aspects of Civil Defense in Biologic Warfare, Council on National Emergency Medical Service, J. A. M. A. **145**: 900-905 (March 24) 1951. (*c*) Creasy, W. M.: Biological Warfare, Armed Forces Chem. J. **5**: 16-18; 46-47 (Jan.) 1952. (*d*) United States Civil Defense: Civil Defense Against Biological Warfare, TM-11-10, Federal Civil Defense Administration, November, 1953. (*e*) Phair, J. J.: Threat of Biological Warfare, Armed Forces Chem. J. **8**: 14-16 (Jan.-Feb.) 1954.

2. (*a*) Wells, W. F.: Airborne Contagion and Air Hygiene: An Ecological Study of Droplet Infections, Cambridge, Mass., Harvard University Press, 1955. (*b*) Rosebury, T., and others: Experimental Air-Borne Infection, Baltimore, Williams & Wilkins Company, 1947. (*c*) Druett, H. A., and others: Studies on Respiratory Infection: Influence of Aerosol Particle Size on Infection of Guinea-Pig with Pasteurella Pestis, J. Hyg. **54**: 37-48 (March) 1956.

3. Footnotes 1 *d* and *e*.

4. Ley, H. L., and others: Immunization Against Scrub Typhus: Living Karp Vaccine and Chemoprophylaxis in Volunteers, Am. J. Hyg. **56**: 303-312 (November) 1952.

5. Henderson, D. W.; Peacock, S., and Belton, F. C.: Observations on Prophylaxis of Experimental Pulmonary Anthrax in Monkey, J. Hyg. **54**: 28-36 (March) 1956.

6. (*a*) Smith, H. and Keppie, J.: Studies on Chemical Basis of Pathogenicity of Bacillus Anthracis Using Organisms Grown in Vivo, in Mechanisms of Microbial Pathogenicity: 5th Symposium of Society for General Microbiology Held at Royal Institute, London, April, 1955, edited by J. W. Howie and A. J. O'Hea, London, England, Cambridge University Press, 1955, pp. 126-151. (*b*) Medical Staff, Department of Medicine, Johns Hopkins University Hospital: Personal communication to the author.

7. Keppie, J.; Smith, H., and Harris-Smith, P. W.: Chemical Basis of Virulence of Bacillus Anthracis: Role of Terminal Bacteraemia in Death of Guinea-Pigs from Anthrax, Brit. J. Exper. Path. **36**: 315-322 (June) 1955.

8. Nungester, W. J.: Nonspecific Factors in Immunity, in Annual Review of Microbiology, 1951-1954, edited by C. E. Clifton, S. Raffel, and R. Y. Stanier, Stanford, Calif., Annual Reviews, Inc., 1954, vol. 8, pp. 363-392.

9. Van Heyningen, W. E.: Role of Toxins in Pathology, in Mechanisms of Microbial Pathogenicity: 5th Symposium of Society for General Microbiology Held at Royal Institute, London, April, 1955, edited by J. W. Howie and A. J. O'Hea, London, England, Cambridge University Press, 1955, pp. 17-39.

10. Cox, H. R.: Viral and Rickettsial Toxins, in Annual Review of Microbiology, 1951-1954, edited by C. E. Clifton, S. Raffel, and H. A. Barker, Stanford, Calif., Annual Reviews, Inc., 1953, vol. 7, pp. 197-217.

11. Stevenson, H. J. R., and Bolduan, O. E. A.: Infrared Spectrophotometry as Means for Identification of Bacteria, Science **116**: 111-113 (Aug. 1) 1952.

12. Wagner, J. C.; Meiklejohn, G.; Kingsland, L. C., and Hickish, H. W.: Psittacosis Vaccines Prepared from Chick Embryo Tissues, J. Immunol. **54**: 35-46 (Sept.) 1946.

13. Raffel, S.: Immunity: Hypersensitivity, Serology, New York, Appleton-Century-Crofts, Inc., 1953, chap. 15.

14. Gladstone, G. P.: Immunity to Anthrax: Protective Antigen Present in Cell-Free Culture Filtrates, Brit. J. Exper. Path. **27**: 394-418 (Dec.) 1946.

15. Wright, G. G.; Green, T. W., and Kanode, R. G.: Studies on Immunity in Anthrax: Immunizing Activity of Alum-Precipitated Protective Antigen, J. Immunol. **73**: 387-391 (Dec.) 1954.

16. Dick, G. W. A., and Horgan, E. S.: Vaccination by Scarification with Combined 17D Yellow Fever and Vaccinia Vaccine, J. Hyg. **50**: 376-383 (Sept.) 1952.

17. Smithburn, K. C.: Rift Valley Fever: Neurotropic Adaption of Virus and the Experimental Use of This Modified Virus as Vaccine, Brit. J. Exper. Path. **30**: 1-16 (Feb.) 1949.

18. (*a*) Cabasso, V. J.; Cox, H. S., and Markham, F. S.: Control of Viral Infections with Modified Live Viruses, Scientific Exhibit, 104th Annual Meeting of the American Medical Association, June 6-10, 1955. (*b*) Schwab, M. P.; Fox, J. P.; Conwell, D. P., and Robinson, T. A.: Avianized Rabies Virus Vaccination in Man, Bull. World Health Organ. **10**: 823-835, 1954.

19. Schlesinger, R. W., and others: Response of Man to Attenuated Dengue and Yellow Fever Viruses, in Bacteriological Proceedings, 1955, Society of American Bacteriologists, Baltimore, Williams & Wilkins Company, 1955, p. 70.

20. (*a*) Shimkin, M. B.; Guttentag, O. E.; Kidd, A. M., and Johnson, W. H.: Problem of Experimentation on Human Beings, Science **117**: 205-215 (Feb. 27) 1953. (*b*) Ladimer, I.: Human Experimentation, Medicolegal Aspects, read before the 104th Annual Meeting of the American Medical Association, Atlantic City, N. J., June 8, 1955.

21. Meyer, K. F.: Immunity in Plague: Critical Consideration of Some Recent Studies, J. Immunol. **64**: 139-163 (March) 1950.

22. Fox, J. P.: Review of Experience with Avirulent Strain of R. Prowazeki (Strain E) as Living Agent for Immunizing Man Against Epidemic Typhus, Am. J. Pub. Health **45**: 1036-1048 (Aug.) 1955.

23. Markham, F. S.: Problems and Prospects in Virus Immunization, J. Iowa M. Soc. **44**: 505-509 (Nov.) 1954.

24. Faibich, M. M., and Ramarina, T. S.: Dry Living Tularemia Vaccine of NIIEG of Red Army, Zhur. mikrobiol., epidemiol. i immunobiol., no. 7, pp. 59-63, 1946.

25. Cox, H. R.: Living Modified Viruses as Immunizing Agents, Brit. M. J. **2**: 259-265 (July 31) 1954.

26. Whorton, C. M., and others: Chesson Strain of Plasmodium Vivax Malaria: Immunity, J. Infect. Dis. **81**: 1-6 (July-Aug.) 1947.

27. Morales-Otero, P.: Further Attempts at Experimental Infection of Man with Bovine Strain of Brucella Abortus, J. Infect. Dis. **52**: 34-39 (Jan.-Feb.) 1933.

28. Olansky, S., and others: Inoculation Syphilis in Human Volunteers, Scientific Exhibit, 104th Annual Meeting of the American Medical Association, June 6-10, 1955.

29. Ley, H. L., Jr.; Smadel, J. E.; Diercks, F. H., and Paterson, P. Y.: Immunization Against Scrub Typhus: Infective Dose of Rickettsia Tsutsugamushi for Men and Mice, Am. J. Hyg. **56**: 313-319 (Nov.) 1952.

30. Sabin, A. B.: Research on Dengue During World War II, Am. J. Trop. Med. **1**: 30-50 (Jan.) 1952.

31. Henle, W.; Drake, M. E.; Henle, G., and Stokes, J., Jr.: Evidence for Propagation of Virus of Serum Hepatitis in Chick Embryo, Arch. ges. Virus Forsch. **4**: 612-620, 1952.

COUNCIL ON PHARMACY AND CHEMISTRY

NEW AND NONOFFICIAL REMEDIES

Monographs and supplemental statements on drugs that appear in this column have been authorized by the Council for publication and inclusion in New and Nonofficial Remedies. They are based upon the evaluation of available scientific data and reports of investigations.

H. D. KAUTZ, M.D., *Secretary.*

Use of Sodium Acetrizoate for Cerebral Angiography

The Council was requested to evaluate the usefulness and safety of sodium acetrizoate for cerebral angiography. This water-soluble organic iodine compound previously has been found suitable as a contrast medium for intravenous (excretory) urography, retrograde (transureteral) pyelography, intravenous nephrography and angiocardiography, translumbar arteriography, and intraductal cholangiography. On the basis of currently available evidence, the Council concluded that it is also useful for the visualization of the cerebral arteries; however, sufficient evidence and clinical experience have not been accumulated to permit a definite conclusion regarding its efficacy or toxicity as compared to other agents used for this purpose.

The dosage of sodium acetrizoate for cerebral angiography varies, but in general the total volume administered as a single injection probably should not exceed 10 cc. This is injected as a 30% solution into the external carotid artery immediately before roentgenographic exposure. Severe and dangerous reactions may occur if the 70% solution is injected accidentally; hence, extreme caution should be exercised regarding the proper concentration.

The Council voted to amend New and Nonofficial Remedies accordingly to describe the use of sodium acetrizoate for cerebral angiography.

Mallinckrodt Chemical Works cooperated by furnishing scientific data to aid in the evaluation of the use of sodium acetrizoate for cerebral angiography.

THE JOURNAL
OF THE AMERICAN MEDICAL ASSOCIATION
Edited Under the Direction of the Board of Trustees
Editor and Managing Publisher . . AUSTIN SMITH, M.D.
Associate Editor . . . . . JOHNSON F. HAMMOND, M.D.
Editor for Medical Literature Abstracts . GEORGE HALPERIN, M.D.
Assistant Editor . . . . . WAYNE G. BRANDSTADT, M.D.

Subscription price . . Fifteen dollars per annum in advance
Cable Address . . . . . "Medic, Chicago"

DELIVER US FROM EVIL

GUEST EDITORIAL

Thomas A. Dooley, M.D.

The author of the now widely read book "Deliver Us from Evil" is a young physician who saw, while in the United States Navy, the atrocities that can be committed during war. He improvised a medical camp at Haiphong in North Viet-Nam and became an unsung hero to the natives during the evacuation of North Viet-Nam. With 600,000 refugees to worry about he knew no cessation from his own battle against disease and propaganda that taught, among other things, that Americans were monsters who ate their own children.

Dr. Dooley's book is the subject of a movie now being made. He has resigned from the Navy to return as a civilian to the area where he believes so much can be done. Elsewhere in this issue (page 65) are printed the plans for the medical mission to the kingdom of Laos. Its real title is "Operation Laos of the International Rescue Committee." This organization cannot give Dr. Dooley financial support, so he is using the royalties from his book to pay for the mission. Not long ago Dr. Dooley wrote to the Editor, in part: "Asking around the country to the large pharmaceutical houses and business concerns has given me real insight into our capitalistic system. It has splendor and wonder. Every single outfit I requested supplies from has given me about five times what I asked for . . . yesterday Willys gave me a jeep and the Navy an eight-month supply of field rations . . . if you have a minute say a short prayer for my new work."

Dr. Dooley, all of us send our prayers to you for your work, and we also pray you can help others less fortunate than us to understand the benefits of freedom and of the way of life that is possible only under freedom.—ED.

It is a not-so-pious platitude of godless communism that 90% of the world is steeped in misery and wretchedness. Adding together the massive millions of China, India, Russia, and the uncounted masses of dark Africa, one indeed finds the number to be formidable, especially when the number is compared to the near-minute 170 million Americans who live in comfort. In misery one finds discontent. Discontent breeds the potential for revolution. Moscow-trained professional revolutionists throughout the world are fanning the passions of this discontent. We have witnessed the earth-shaking results.

Including the neutrals of the world, if there really are such things, the professional revolutionists of Stalin have succeeded in wrenching half of all mankind from freedom and plunging them behind a curtain of silence, of iron and bamboo. From the time of the Bolshevik revolution, through the flight to freedom of Viet-Nam at this very moment, hundreds of thousands of people have tried to leave, to escape, to crack through this curtain and achieve or regain their liberty. To them "liberty" and "freedom" have a living value. They are not terms thrown around promiscuously by national leaders, but they are succinct, terse cages in which magnificent ideas are held; they are living, thriving entities portraying all that is goodness. Liberty and freedom to those behind the curtain are a pounding, ever-present dream.

To dream is easy. To escape is difficult. I saw 600,000 who fled. The memory returns like a searing flame. Their anguish. Their panic. Their tears. Their haggard women. Their exhausted children. Their fear. The atrocities. The horror. The death. No one who has ever witnessed such a heartbreaking exodus will forget it for the rest of his life.

It has long been known that a vital and powerful arm of foreign policy of any nation is to be found in medicine and the men of medicine. As physicians in a free land we find within the hierarchy of our duties that we can be of special service to our country as instruments of that policy. American medicine in foreign lands primarily as help but secondarily as an illustration of the intentions, achievements, and policy of our land—herein is our special service. Herein is our nation's special strength. Progress comes of making the most of our strength rather than looking for ways to repair weakness. Fulfilling this service, utilizing this strength, is the highest achievement of honor and duty for American physicians in this time of history bullied by ruthlessness, ravage, and ruin. This challenge to help on distant soil is flung to each American doctor from the first day out of his internship to the last day before he lays down his stethoscope.

Medicine in the underdeveloped, stricken areas of the world has many facets. One large aspect is to be found in aiding those who have escaped from the claws of communism. In Viet-Nam, Laos, Cambodia, Thailand, Formosa, Malaya, India, Israel, and Jordan literally millions of humans are living in temporary shelters, in huge tent-cities, in small wooden huts—in refugee camps. Here a doctor finds the gauntlet hurled at him.

The problems confronting the new doctor in a refugee camp, especially if he is young and inexperienced, appear at first sight to be staggering. As times goes on, they remain staggering. Years later, when the doctor sits in the dressing room of a stateside operating room suite and discusses the problems of his "old refugee camp" half a world away, the problems still

loom up staggering. Our schooling is not directed toward this type of practice. I distinctly remember my professor in medical school speaking of smallpox and saying, "Don't worry, you graduates of '53, unlike those of '23, will never see smallpox." One year later, in a three-day period, I lost 157 children from this putrid horror alone.

The problems that the doctor will have to handle in a refugee camp, especially in Asia, fall into two categories: medical problems, usually of an epidemic nature, and sociologic problems, often more overwhelming. The second category is more important, because unless these problems are resolved, at least to a marginal extent, no medicine can be passed out, not a needle can touch the skin, not a person will have any trust.

The medical problems need little explanation; mention will be enough. The task of feeding is enormous. One must have nourishing and palatable food, palatable by their taste-test, not ours. In Viet-Nam we gave 600 gm. of rice to each person per day, along with one fish and some foul-smelling local sauce made of decaying carp (*nuoc mom* is called the chili sauce of the Orient).

Potable water must be processed. This is extremely important. We had a small Navy machine that did our job, filtering and chlorinating one gallon per refugee per day. Sometimes this was as much as 15,000 gallons per 24-hour period. There are disposal problems. Disposal of waste cooking products was an extremely small problem. Disposal of human waste products was a gigantic one. Fifteen thousand people in one relatively small camp produced a fantastic problem in plumbing. (You do not have to be a board-qualified specialist to learn this.)

Burial of the dead without offending local tradition is difficult. Though this seems a small problem, one soon runs out of available cemetery space when he loses 15 to 20 people a day. In Viet-Nam we buried one coffin on top of another, with one religious service per three coffins. The refugees of North Indo-China had undergone atrocity and torture and in many areas had suffered from starvation. They arrived in our camps barely clinging to life. Many lost hold.

Immunization against cholera and smallpox is imperative; I wish the pharmaceutical houses would develop one vaccine for the two and one that would not require refrigeration. Though cholera annihilated villages up the delta from our camp, we had no epidemics within the camp proper. Smallpox was rampant in the North, but, when the refugee children arrived with the pox, they were immediately isolated. Rarely did new cases spring up from within the camp. Isolation techniques similar to U. S. standards were impossible, but a feeble attempt met with some success.

The diseases seen at sick call daily were like the index to the tropical medicine course. With no electricity, no x-ray, no laboratory, no nurses, and no microscope, one finds oneself saying, "It looks like the picture, smells like they say it should, has a few of the characteristic signs and symptoms—it must be—I'll treat it as if it was, if the patient is cured in 10 days —I was right." This is offensive to many in medicine, but the exigencies of the situation sometimes rob us of our highest ideals. There are no purists working in a refugee camp.

Surgery should never be attempted unless absolutely needed. News of one death from a scalpel or even weeks after a surgical procedure will spread around the camp, and the doctor will be in a situation where he has 15,000 people in his camp and no one will let him touch them. Skin infections are common in the Orient and can frequently be cured rapidly. The clearing up of a micrococcic skin infection with the miraculousness of a penicillin-effected remission of yaws is the most spectacular cure encountered. The "propaganda" effect on natives is amazing. One assumes a godlikeness in a village when he eradicates yaws. And it is a relatively simple task to do this. (No worry over sensitivity tests or tolerance here.)

I believe, however, in spite of the medical problems encountered, the sociologic problems and their ensuing complications are far more important. This is especially true in the Orient. Let us not forget for one minute that the majority of the people one will see in such a situation as we had in Indo-China will be of a group who have seldom seen a white man. They have never seen a physician. They have never ever seen an American. The majority of the people believe that, when a child has a swollen belly, a palpable spleen, and a blazing fever, he dies. The idea of chloroquine curing this child's malaria is unbelievable. Let us not forget that the type of people that one will find in a refugee camp truthfully believe that it is just as normal to find death stalking every child and every infant as we in America believe it is normal to find death stalking a man in his 80's.

In a refugee camp, then, the physician suddenly finds himself a number of "persons"—the first doctor, the first American, the first Caucasian, the first believed-to-be-monster—and, in a short time, if he does not do an adequate job, he will be the first to be asked to leave, sometimes forcibly. Sociologically he has to combat centuries of tradition and custom. Though they do not sound important, tradition and custom are as real and thriving as they are appalling and frustrating. Strings around the wrists, beads around the neck, tobacco into the ears, and hundreds of other medieval—no, earlier than medieval—customs still command the Orient. The high priestess of these is the grandmother. The grandmothers of Asia are 10 times worse than the most malignant mothers-in-law of America. If you can win the haggard, wrinkled old grandmother to your side and get her to believe in penicillin, or sometimes even soap and water, then you can easily convince the rest of the village.

Understandably the people have a great fear of the American. Never have they seen a person so fast, so strange, so tireless, so mechanical, and with such odd looking orbital structures. (He looks well fed; does he really eat children?) Even to many American patients the doctor's armamentarium of glistening instruments is a sight to behold. Put a mirror on your head, a

stethoscope around your neck, a syringe and needle in your hand, and a table of glass jars in front of you; paint an arm with Merthiolate; and speak a mumbo jumbo called medical English—you certainly are frightening.

In some areas of the Orient there is a very special problem, Communist propaganda. This follows the same pattern as used in other parts of the world. That aimed at medicine usually proclaims that our needles will inject bacteriological warfare, our DDT will render the people sterile, and our soaps on a child's scalp will make him feeble-minded. They claim we will bring air-borne death to the earth-born people of Asia. Doctors are a special brand of ogres developed in monstrous America and sent to foreign lands to experiment fiendishness. To overcome this we must show persistence in our gentleness. We can never run out of compassion. We must understand and grow to love our patients. The former is always hard, but the latter is an easily acquired joy. With perseverance we can show our nation's policy of aid and God's policy of charity to our brothers. Dr. Albert Schweitzer was correct when he said, "I don't know what your destinies will be, but one thing I know: the only ones amongst you who will be really happy are those who will have sought and found, how to serve."

To implement our foreign policy of aid and help to those underdeveloped and threatened communities of the world, a physician has a special calling. Through the World Health Organization, UNESCO, CARE, the International Rescue Committee, the Public Health Service, the State Department, the International Cooperation Administration, and a myriad of other such organizations, we can work to help those who, like my sailors used to say, "ain't got it so good."

From a war not so long ago, though two have succeeded it, there emerged a great poem, "Flander's Field." The closing lines said: "Take up the torch from we the dead." The hands of medicine, with gentle arms extended to noble but wretched people, can best hold up the torch of light, the torch of health, the torch of freedom.

MEDICAL EXAMINER VERSUS CORONER SYSTEM

At irregular intervals for over 100 years, the American Medical Association has been concerned with the need for improvement in both the quality and the quantity of medicolegal investigations in many parts of the United States. In 1855 a committee was appointed by the House of Delegates of the American Medical Association to report what measures should be adopted to remedy the evils then existing in the methods of holding coroners inquests "by which the lives and liberties of the innocent may be jeopardized, and the ends of justice frustrated." Through the years committees were appointed, investigations and studies made, and reports given, and in 1948 the House of Delegates adopted a report of its Reference Committee on Reports of Board of Trustees and Secretary that stated in part: "The Medical Examiner: It is noted with considerable interest that the coroner-medical examiner system is gradually replacing the old coroner system. . . . Your committee wishes to reemphasize the previous pronouncements of this House in favor of the medical examiner system to replace the antiquated coroner system."

A few years later, the American Medical Association, through the Committee on Medicolegal Problems and the former Bureau of Legal Medicine and Legislation, collaborated with a number of other interested organizations (American Bar Association, American Academy of Forensic Sciences, American Judicature Society, National Municipal League, and National Civil Service League) in the preparation of a draft law that could be used as a model by state legislatures wishing to take action in this field. The result of this collaboration was the approval, in 1954, by the National Conference of Commissioners on Uniform State Laws of a "Model Post-Mortem Examinations Act." The purpose of this act, according to a prefatory note of the commissioners, is "to provide a means whereby greater competence can be assured in determining causes of death where criminal liability may be involved." Unfortunately, copies of the model act were not available for distribution until too late for the 1955 state legislatures to consider the subject matter represented by its provisions.

Often in the past, the pages of THE JOURNAL have reflected the opinion of the profession that there is much room for improvement in the quality and quantity of medicolegal investigations and have urged the profession to take the steps necessary to accomplish such improvement. Now is the appropriate time for committees of state medical societies to consider the creation of a statewide medical examiner system in formulating programs for presentation to the 1957 state legislature.

According to the National Municipal League, which is spearheading the campaign to improve state medicolegal investigative facilities, substantial compliance with the principles of the model law now exists in Massachusetts, Maryland, Virginia, Arkansas, Rhode Island, North Carolina, Georgia, Vermont, Louisiana, and parts of other states; in four populous counties in Texas; in Arizona,, Detroit, Philadelphia, Los Angeles, Miami; and under new permissive laws in some counties of Michigan, New York, and North Dakota. In addition, Oregon will vote in November, 1956, on a constitutional amendment to remove coroners from the state constitution.

The fact that many of these endeavors received active support from the physicians in the areas involved indicates that the profession is not insensitive to its civic obligations. State society legislative committees that are laying the groundwork for this kind of activity during 1957 would be well advised to welcome the help that can be given by the National Municipal League in acquainting legislators with the provisions of, and need for, a Model Post-Mortem Examinations Act.

ORGANIZATION SECTION

THE SCIENTIFIC EXHIBIT AT CHICAGO

REPORT OF COMMITTEE ON AWARDS

The Committee on Awards has made the following report of the awards given at the 1956 Annual Meeting of the American Medical Association.

Hektoen Medal

The Hektoen Medal is presented for exhibits of original investigation, which are judged on the basis of originality and excellence of presentation. Three awards are made, consisting of gold, silver, and bronze medals.

HEKTOEN GOLD MEDAL to Samuel Rosen, New York, for the exhibit on Mobilization of Stapes for Otosclerotic Deafness.

HEKTOEN SILVER MEDAL to Edwin H. Ellison, Ohio State University Health Center, Columbus, Ohio, for the exhibit on the Ulcerogenic Tumor of the Pancreas.

HEKTOEN BRONZE MEDAL to Harold J. Magnuson and Joseph Portnoy, Public Health Service, Department of Health, Education, and Welfare, Washington, D. C., for the exhibit on Treponema Pallidum Complement Fixation Test.

Billings Medal

The Billings Medal is presented for exhibits that do not exemplify purely experimental studies but are judged on the basis of excellence of correlating facts and excellence of presentation. Three awards are made, consisting of gold, silver, and bronze medals.

BILLINGS GOLD MEDAL to W. D. Snively Jr., M. J. Sweeney, and Martha Wessner, St. Mary's Hospital, Evansville, Ind., for the exhibit on the Body Fluids: Foundation Facts, Clinical Diagnosis, Therapy.

BILLINGS SILVER MEDAL to R. B. Hogan, M. M. Brooke, G. R. Cooper, D. S. Martin, and M. Schaeffer, Communicable Disease Center, Public Health Service, U. S. Department of Health, Education, and Welfare, Atlanta, Ga., for the exhibit on Laboratory Techniques in the Diagnosis of Communicable Diseases.

BILLINGS BRONZE MEDAL to Roderick D. Turner and Elmer Belt, University of California School of Medicine at Los Angeles, for the exhibit on Surgical Techniques of Total Perineal Prostatectomy.

Section Awards

Certificates of Merit and Honorable Mention were awarded to the following exhibits in each Section.

Section on Anesthesiology

Certificate of Merit to Reuben C. Balagot, Rosauro Ma. Reyes, Gareth B. Gish, and Max S. Sadove, University of Illinois College of Medicine, Chicago, for the exhibit on Pulmonary Edema: Antifoam Agents.

Honorable Mention to William K. Bannister and David M. Little, Hartford Hospital, Hartford, Conn., for the exhibit on Physiological Treatment of Asphyxia Neonatorum.

Section on Dermatology

Certificate of Merit to Robert F. Tilley, John Adams Jr., Chester N. Frazier, and Robert Griesemer, Masssachusetts General Hospital and Harvard Medical School, Boston, and George Odland, Seattle, for the exhibit on Tuberculosis of the Skin.

Honorable Mention to Louis C. Zopf and Seymour Blaug, the United States Pharmacopeia, New York, for the exhibit on Dermatological Preparations.

Honorable Mention to Richard J. Rowe and Harland C. Dangle, Marshfield Clinic, Marshfield, Wis., for the exhibit on Dermatological Lesions Seen in General Practice.

Section on Diseases of the Chest

Certificate of Merit to Aldo A. Luisada and C. K. Liu, Chicago Medical School, Chicago, for the exhibit on Patterns of Cardiovascular Pressure Pulses Obtained by Catheterization.

Honorable Mention to Henry T. Nichols, Clarence Denton, and Joseph F. Uricchio, Hahnemann Medical College, Philadelphia, for the exhibit on Mitral Insufficiency: Correction by Polar Cross Plication of the Annulus Fibrosis.

Section on Experimental Medicine and Therapeutics

Certificates of Merit to Albert Sjoerdsma, Luther L. Terry, and Sidney Udenfriend, National Heart Institute, Bethesda, Md., for the exhibit on Malignant Carcinoid, A New Metabolic Disorder.

Honorable Mention to Carroll A. Handley, John H. Moyer, and R. A. Seibert, Baylor University College of Medicine, Houston, Texas, for the exhibit on the Action of Mercurial Diuretics and the Fractionation of Excretory Products.

Section on Gastroenterology and Proctology

Certificate of Merit to C. F. Code, A. M. Olsen, F. E. Donoghue, H. A. Andersen, B. Creamer, F. E. Fyke Jr., and A. H. Bulbulian, Mayo Clinic and Mayo Foundation, Rochester, Minn., for the exhibit on Esophageal Motility: Dynamics of Deglutition in Health and Disease.

Honorable Mention N. C. Hightower, A. C. Broders Jr., R. D. Haines, A. W. Sommer, and J. F. McKenney, Scott and White Clinic, Temple, Texas, for the exhibit on Chronic Ulcerative Colitis: Diagnostic and Therapeutic Considerations.

Honorable Mention to David C. H. Sun and Harry Shay, Temple University School of Medicine, Philadelphia, for the exhibit on Value of Proper Dosage of Anticholinergic Drugs in Treatment of Peptic Ulcer: Optimal Effective Dose.

Section on General Practice

Honorable Mention to Franklin M. Foote, Willis S. Knighton, and Virginia Smith Boyce, National Society for the Prevention of Blindness, New York, for the exhibit on Early Detection of Glaucoma.

Honorable Mention to H. E. Nieburgs, Beth El Hospital, New York, for the exhibit on Control of Cervical Carcinoma by General Population Screening: The Floyd County Project.

Section on Internal Medicine

Certificate of Merit to Goronwy O. Broun and Rose Rita Schmidt, St. Louis University School of Medicine, St. Louis, for the exhibit on Epidemiology of Influenza as Demonstrated by a Study of Serum Pools.

Certificate of Merit to Bernard H. Ostrow, Daniel Steinberg, Howard E. Ticktin, and John M. Evans, George Washington University School of Medicine, Washington, D. C., and National Heart Institute, National Institutes of Health, Bethesda, Md., for the exhibit on Serum Glutamic Oxaloacetic Transaminase (G. O. T.) in Myocardial Infarction.

Section on Laryngology, Otology and Rhinology

Certificate of Merit to Irving M. Blatt, Philip Rubin, James H. Maxwell, John F. Holt, and John E. Magielski, University of Michigan Medical School, Ann Arbor, for the exhibit on Secretory Sialography in Health and Disease.

The Committee on Awards was composed of the following physicians: Frank W. Konzelmann, Washington, D. C., Chairman; O. P. J. Falk, St. Louis; Richard A. Mills, Fort Lauderdale, Fla.; Sam H. Sanders, Memphis, Tenn.; and W. Walter Wasson, Denver.

Honorable Mention to Maurice H. Cottle, George G. Fischer, and Roland M. Loring, Chicago, Ralph H. Riggs, Shreveport, La., and Ivan W. Philpott, Denver, for the exhibit on Early Nasal Injuries: A Factor in Facial and Dental Deformity.

Section on Military Medicine

Certificate of Merit to Sylvester F. Williams, Elmer R. King, and T. G. Balbus, U. S. Naval Hospital, Bethesda, Md., for the exhibit on Clinical Diagnostic Studies Utilizing Radioactive Isotopes.

Honorable Mention to Charles Huggins and Edwin L. Carter, Naval Medical Research Institute, National Naval Medical Center, Bethesda, Md., for the exhibit on Experimental Hepatic Surgery Employing Differential Hypothermia.

Honorable Mention to S. W. French III, Herbert T. Berwald, and Joseph L. Hannon, Letterman Army Hospital, San Francisco, for the exhibit on the Pulmonary Coin Lesion: A Harmless Looking Killer.

Section on Nervous and Mental Diseases

Certificate of Merit to Maurice L. Silver, Providence, R. I., for the exhibit on Simplified Method of Cerebral Angiography.

Honorable Mention to Robert S. Schwab, Benjamin Castleman, Oliver Cope, Richard Sweet, James Vanderbeen, and Henry R. Viets, Massachusetts General Hospital, Boston, for the exhibit on Thymectomy in Myasthenia Gravis.

Section on Obstetrics and Gynecology

Certificate of Merit to Frederick H. Falls and Charlotte S. Holt, Illinois Department of Public Health and University of Illinois College of Medicine, Chicago, for the exhibit on Version and Extraction.

Honorable Mention to Joseph W. Kelso and Joseph W. Funnell, Oklahoma City, for the exhibit on Surgical Management of Carcinoma of the Cervix.

Section on Ophthalmology

Certificate of Merit to Bertha A. Klien, University of Chicago, the School of Medicine, Chicago, for the exhibit on Survey of Pathogenesis and Treatment of Retinal Venous Occlusion.

Honorable Mention to David Volk, Western Reserve University School of Medicine, Cleveland, for the exhibit on Aids to Subnormal Vision.

Section on Orthopedic Surgery

Certificate of Merit to D. C. Dahlin, R. K. Ghormley, E. D. Henderson, and M. B. Coventry, Mayo Clinic and Mayo Foundation, Rochester, Minn., for the exhibit on Bone Tumors: Analysis of 2,276 Primary Neoplasms of Bone Seen at the Mayo Clinic 1905-1955.

Honorable Mention to Dan R. Baker, Guthrie Clinic, Sayre, Pa., and William J. McHolick, McBride Clinic, Oklahoma City, for the exhibit on Spondyloschisis and Spondylolisthesis in Children.

Section on Pathology and Physiology

Certificate of Merit to Harry F. Weisberg, Mount Sinai Medical Research Foundation and the Chicago Medical School, Chicago, for the exhibit on a Better Understanding of Anion-Cation (Acid-Base) Balance.

Honorable Mention to Chandler McC. Brooks, Brian F. Hoffman, and E. E. Suckling, State University of New York College of Medicine at New York City, Brooklyn, N. Y., for the exhibit on Physiological States in Sleep.

Section on Pediatrics

Certificate of Merit to Willis J. Potts, W. L. Riker, Arthur DeBoer, and Thomas G. Baffes, Children's Memorial Hospital, Chicago, for the exhibit on Intestinal Obstruction in Newborn Infants.

Honorable Mention to Bohdan Dobias, New York, and Walter Mitchell Jr., Newark, N. J., for the exhibit on Diagnosis and Treatment of Moniliasis in Pediatrics.

Section on Physical Medicine

Certificate of Merit to Edward E. Gordon, Michael Reese Hospital, Chicago, for the exhibit on What Price Ambulation? A Study of the Indications and Contraindications for Paraplegic Ambulation.

Honorable Mention to Ray Piaskoski, Robert W. Boyle, Edwin C. Welsh, Paul A. Dudenhoefer, Albert M. Cohen, and DeLore Williams, Marquette University School of Medicine, Milwaukee, for the exhibit on Preventive Measures in the Management of the Hemiplegic.

Section on Preventive and Industrial Medicine and Public Health

Certificate of Merit to Howard Hansen, N. K. Weaver, and J. T. Perret, Esso Standard Oil Co., Baton Rouge, La., for the exhibit on Arteriosclerotic Hearts at Work.

Honorable Mention to D. O. Hamblin, Harold H. Golz, and C. Boyd Shaffer, New York, for the exhibit on Phosphate Ester Insecticide Poisoning.

Section on Radiology

Certificate of Merit to Franz P. Lessmann, Robert Schobinger Von Schowingen, Elliott C. Lasser, and Paul Zuckerman, Roswell Park Memorial Institute, Buffalo, N. Y., for the exhibit on Clinical Applications of Intraosseous Venography.

Honorable Mention to Lawrence Reynolds, William M. Tuttle, Harold E. Fulton, and George F. Boone, Harper Hospital, Detroit, for the exhibit on Preoperative Roentgen Studies in Primary Lung Carcinoma.

Honorable Mention to Charles M. Greenwald, Thomas F. Meaney, and C. Robert Hughes, Cleveland Clinic, Cleveland, for the exhibit on Chordoma.

Section on Surgery, General and Abdominal

Certificate of Merit to George T. Pack, Gordon P. McNeer, Richard Brasfield, Kathleen E. Roberts, Douglas A. Sunderland, Louis G. Ortega, and Henry T. Randall, Memorial Hospital, New York, for the exhibit on Treatment of Gastric Cancer.

Certificate of Merit to Alton Ochsner, Robert J. Schramel, John B. Blalock, Jack Harold Keeling, and Jack A. Haley, Tulane University School of Medicine and Ochsner Clinic, New Orleans, for the exhibit on Carcinoma of the Lung.

Honorable Mention to James F. Connell Jr., William Philip, Frank Gilbertson, and Louis M. Rousselot, St. Vincents Hospital, New York, for the exhibit on the Problem of the Nonadherent Surgical Dressing.

Section on Urology

Certificate of Merit to Edwin L. Prien and Burnham S. Walker, Boston University School of Medicine, Boston, for the exhibit on Salicylate Therapy for Recurrent Calcium Urinary Stone.

Certificate of Merit to Albert E. Goldstein, B. S. Abeshouse, Cafer Yildiran, Morton Goldfarb, and Hannah Silberstein, Hoffberger Urological Research Laboratory, Sinai Hospital and University of Maryland School of Medicine, Baltimore, for the exhibit on Bladder Substitutes: An Experimental Study in Dogs.

Section on Miscellaneous Topics

Honorable Mention to Oren C. Durham, Abbott Laboratories, North Chicago, Ill., and David Merksamer, Jewish Hospital, Brooklyn, N. Y., for the exhibit on Air-Borne Mold Spores in Seasonal Allergy.

Exhibit Symposium on Traffic Accidents

Certificate of Merit to Claire L. Straith, Richard E. Straith, Joseph D. Carlisle, and Burns G. Newby, the Straith Memorial Hospital, Detroit, for the exhibit on Treatment of Traffic Injuries.

Honorable Mention to E. C. Paul, Indiana State Police, Indianapolis, for the exhibit on Auto Crash Injury Research.

Exhibit Symposium on Arthritis and Rheumatism

Honorable Mention to L. Maxwell Lockie and John H. Talbott, University of Buffalo School of Medicine and Buffalo General Hospital, Buffalo, N. Y., for the exhibit on Gout.

Honorable Mention to Edward W. Lowman, Institute of Physical Medicine and Rehabilitation, New York, for the exhibit on Self-Help Devices for the Arthritic.

Subsidized Exhibits

The Committee on Awards commends highly the Special Exhibits on Fractures, Gross Pathology, Pulmonary Function Testing, P. E. for every M.D., and the Cardiovascular Demonstrations.

Appreciation

A Certificate of Appreciation is awarded to J. M. Sanchez-Perez, Mexico City, Mexico, for the exhibit on Automatically Controlled Stereo-Serio-Cerebral Angiography.

A Certificate of Appreciation is awarded to André Mackay, Armand Trépanier, and Maurice R. Dufresne, Hospital Notre Dame, Montreal, Canada, for the exhibit on Selective Segmental Bronchography.

Comment

The Committee on Awards wishes to point to the improvement in the general excellence of presentation and also to the increasing interest in original investigation of high quality that has brought forth meritorious exhibits in this class. It, therefore, wishes to commend all of the other exhibitors for their efforts in the preparation and diligence in the demonstration of their exhibits.

The Committee also wishes to commend the professional staff of Dr. Thomas G. Hull for their efforts in making this Scientific Exhibit a success.

ACTIONS BY BOARD OF TRUSTEES

The following actions were taken by the Board of Trustees at its meeting in Chicago on June 7-14, 1956.

Clinical Meeting

Dallas, Texas, was selected by the Board of Trustees as the place for the 1959 Clinical Meeting of the American Medical Association. A suitable date will be selected at a future time.

Military Medical Activities

The Council on National Defense was authorized to continue its study of the "Doctor-Draft" act, which expires on June 30, 1957. The Council feels that additional information is needed before a recommendation can be made to the Board on this subject.

An expanded public relations program on military medical activities of the Council on National Defense, its Committee on Military Medical Affairs, and the American Medical Association was approved. It is planned to publish more material in THE JOURNAL, the *Armed Forces Medical Journal*, and the *Student A. M. A. Journal* on subjects of interest to the profession.

The Board also approved a recommendation that the dual compensation laws restricting the employment of retired officers by the federal government be revised. A relaxation of the current laws would permit the employment of experienced personnel in the fields of medicine, electronics, guided missiles, radar, and atomic energy. These are all fields vital to the national defense.

Authorization was given to send a letter to the Secretary of the Navy and the Secretary of the Army urging the Secretary of Defense to issue the necessary directive so that medical control of the Armed Forces Medical Procurement Agency would be maintained through the retention of the surgeons general of the departments of the Army, Navy, and Air Force for advice, selection, and control of items of medical equipment and supply necessary in the proper scientific treatment of patients.

Rural Health

Approval was given to a request from the Council on Rural Health for a conference of state rural health chairmen, to be held at Purdue University in the fall of 1956.

Industrial Ophthalmology

The Board authorized the appointment of an advisory committee on industrial ophthalmology by the Council on Industrial Health. The members of this committee will be selected from the field of ophthalmology, rather than from any special group, and will function under the aegis of the Council. This committee replaces the present committee on this subject of the Section on Ophthalmology of the A. M. A.

World Medical Association

In response to a communication from the secretary general of the World Medical Association, the Board referred to the Council on Medical Service, for its study, the question of the role of the individual physician in the field of preventive medicine and what the principles should be in establishing cooperation between practicing physicians and public health officials.

The Board also voted not to approve of the World Medical Association assuming "administrative responsibility" for international awards.

Dr. Raymond B. Allen has accepted the presidency of the Second World Conference on Medical Education sponsored by the W. M. A., to be held in Chicago in 1959. A program committee for this conference has been appointed.

World Health Organization

The 10th anniversary of the signing of the constitution of the World Health Organization will occur in 1958. The Board supported a suggestion that an invitation be issued to hold the 1958 World Health Assembly in the United States.

Public Relations Conference

At the request of the Public Relations Department, the Board authorized discontinuance of the Public Relations Conference usually held prior to the Clinical Meeting of the Association.

Postgraduate Medical Education

Approval was given to the Council on Medical Education and Hospitals to appoint an *ad hoc* advisory committee on postgraduate medical education to assist in the planning in this field.

Committee on Rehabilitation

The following members have been appointed to the Committee on Rehabilitation, representing the Council of the Association as indicated: Drs. H. B. Mulholland, Council on Medical Service; Francis J. Gerty, Council on Mental Health; Guy Caldwell, Council on Medical Education and Hospitals; and O. A. Sander, Council on Industrial Health. As soon as a nomination has been received from the Council on Medical Physics, a representative from this Council will be appointed.

Appointments

The following appointments to councils, committees, and special functions were made:

Dr. Rolf Schloegel, temporary consultant to the Council on Medical Service.

Dr. Carroll Andrews, to fill the unexpired term of Dr. Robb Smith on the Council on Rural Health.

Dr. D. Denny-Brown, to succeed Dr. Puttnam, and Drs. George Gardner, Douglas Orr, M. Ralph Kaufman, and Fritz Redlich as additional members on the editorial board of the *A. M. A. Archives of Neurology and Psychiatry*.

Dr. Victor Goodhill, to fill the unexpired term of Dr. J. Mackenzie Brown, and Dr. George Shambaugh Jr., as an additional member on the editorial board of the *A. M. A. Archives of Otolaryngology*.

Dr. B. Dixon Holland, to fill the unexpired term of Dr. Carl Peterson on the editorial board of the *A. M. A. Archives of Industrial Health*.

Dr. Henry A. Davidson, to succeed Dr. Francis J. Gerty on the Committee on Medicolegal Problems.

Dr. Jay Johns, to succeed Dr. Ray O. Bjork on the Joint Committee on Health Problems in Education.

Dr. James R. Reuling, Chairman, to succeed Dr. David B. Allman, and Dr. James R. McVay, an additional member on the Committee on Legislation.

Council on Constitution and Bylaws, Dr. James R. Reuling, ex officio.

Task Force on Dependent Medical Care, Drs. E. S. Hamilton, Chairman, James R. Reuling, Hugh H. Hussey Jr., and Joseph D. McCarthy.

Alexander Hamilton Bicentennial Commission

At the request of the director of the Alexander Hamilton Bicentennial Commission, several names were suggested for membership on its Medical Advisory Committee.

Nurses and Nursing

Dr. Julian P. Price and Mr. C. Joseph Stetler were appointed to represent the Association at a meeting to be called by the American Nurses' Association for a discussion of legal and legislative implications of the extended functions required by nursing personnel during disasters.

Clinical Psychologists

The question of the future position of the A. M. A. with respect to certification or licensure of clinical psychologists was referred to the Law Department and the Council on Mental Health for study, analysis, and recommendation.

Grievance Committees

Authorization was given for the preparation of an appendix to the Guides for the Organization and Operation of Grievance Committees, as recommended by the House of Delegates at its meeting in Boston, December, 1955. This appendix will be prepared by members of the staff of the headquarters office.

RESULTS OF EXAMINATION OF PHYSICIANS AT CHICAGO MEETING

The Section on General Practice of the American Medical Association sponsored chest examinations for physicians at the recent meeting of the American Medical Association under the heading "A P.E. for Every M.D." Arrangements were made in the Scientific Exhibit for electrocardiograms and for chest x-rays. These were carried on in cooperation with the National Tuberculosis Association, General Electric X-ray Corporation, and numerous cardiologists and chest physicians.

The results of the examination of the physicians are as follows:

965 Chest X-Rays	No.	%
Negative findings	861	83.5
Suspected tuberculosis	58	6.0
Cardiac findings	42	4.3
Other pathology	59	6.1
1,083 Electrocardiograms		
Negative findings	821	84.9
Abnormal	97	10.0
Borderline	49	5.1
Survey sheets not returned	116	

It is not to be interpreted from the above findings that 6% of the physicians attending the Annual Meeting had tuberculosis. There are many factors to be considered, but the findings do indicate that many of the physicians who were examined on Navy Pier should have further and more complete examinations at home. The Section on General Practice is doing a service to medicine in promoting this project.

JOINT BLOOD COUNCIL MEETING IN CHICAGO

At its June 15 meeting in Chicago the board of directors of the Joint Blood Council gave the go-ahead signal for projects concerned with collection and dissemination of information, improvement of relations within the blood-banking field, accreditation and other administrative problems, and scientific research. A summary of the board's major actions is given below:

Officers Elected

Drs. LeRoy E. Bates and Roger W. DeBusk of the American Hospital Association and Dr. Sam T. Gibson of the American National Red Cross were appointed to fill places on the board; others continuing on the board are Drs. Leonard W. Larson, Walter B. Martin, James J. Griffitts, E. Eric Muirhead, Donald H. Kaump,

and Frank W. Konzelmann and Mr. Charles H. Kellstadt. Dr. Bates was elected treasurer, and the following officers were reelected: Drs. Leonard W. Larson, president; James J. Griffitts, vice-president; and Frank E. Wilson, vice-president and secretary.

Dissemination of Information

A nationwide survey of blood banks was authorized, to be carried out under the direction of Dr. Frank E. Wilson, Washington, D. C., executive vice-president of the Joint Blood Council. A national blood banks directory, to be based on the survey findings, will contain the following information: location and areas served by individual blood banks and hospitals; how each is operated, organized, and supervised; whether commercial or nonprofit; adaptability for expansion in a national emergency; volume of business; and relationship of each blood bank to allied services, such as tissue banks. The directory also will contain a glossary of terms and definitions used in blood banking and blood research.

Authority was given for creation of a bureau of information as a clearing house on progress being made everywhere in all aspects of blood banking and blood research. The information will be sent out by the Joint Blood Council office to each member institution, the scientific committee, the board of directors, journals of member institutions, and others requesting it.

Also approved was a recommendation that a national diagnostic center or reference library be established to make available information on ways to stimulate the study of unusual serums and red blood cells. In this connection, the scientific committee was requested by the board to further study the problem of maintaining national and local blood donor registries for the rarer blood groups.

Relations with Organizations and Industries

Because of reports that the pharmaceutical industry is not receiving enough "surplus" blood to keep its blood fractionating facilities in operation, the board voted the president authority to appoint an ad hoc industry liaison committee to look into this situation. The following persons were appointed: Drs. James J. Griffitts, chairman, Frank W. Konzelmann, and LeRoy E. Bates. Later, the president may at his discretion set up a permanent committee.

The board approved in principle recommendations of a temporary committee on blood insurance problems (Dr. Walter B. Martin, chairman) that immediate steps be taken to (*a*) attempt to persuade health and accident insurance companies to limit their coverage to the cost of voluntary procurement, processing, and dispensing and (*b*) encourage Blue Cross to include in its coverage the cost of processing and dispensing, without any form of donor payment or professional fee.

Accreditation, Research, and Administration

The board agreed with a recommendation of the scientific committee (Dr. Max M. Strumia, chairman) that it is imperative that minimal standards for voluntary accreditation of blood banks be decided on and widely disseminated in professional fields. The need for stimulation of research in the following areas was recognized: (*a*) long-range storage of the red blood cells; (*b*) practical means of platelet preservation; (*c*) preparation and testing of antihemophilic globulin; (*d*) the effect on the red blood cells of water-repelling surfaces; (*e*) further investigation of anticoagulant procedures, such as ion exchange resins to replace citrate in the operation of blood banks, to make possible continuous use of large quantities of blood, as required in some operative procedures; (*f*) continuance of the work to eliminate as donors possible carriers of S. H. virus, or sterilization of the blood itself; and (*g*) recommendations for ideal transfusion equipment insofar as it affects the quality of the formed elements but not necessarily the safety, already considered by the minimum requirements.

Dr. Wilson described to the board his visits to various parts of the United States to obtain an over-all picture of some of the progress and problems in blood banking. Among his other contacts, his itinerary included the following visits: Blood Banks Association of New York State; the Red Cross Regional Center in New York City; King County Central Blood Bank, Seattle; Irwin Memorial Blood Bank, San Francisco; California Blood Bank System, San Francisco; San Diego Blood Bank, San Diego; Pacific Area Clearing House, San Francisco; Southwest Blood Banks, Phoenix, Ariz.; Milwaukee Blood Center, Milwaukee; and Lansing and Battle Creek, Mich. He also visited the American Association of Blood Banks' headquarters in Dallas, Texas.

MEDICINE AND THE LAW

RIGHT OF NON-STAFF MEMBER TO TREAT PATIENTS IN PUBLIC HOSPITALS

Ordinarily a physician is the vehicle through which a patient is admitted to a hospital; however, a recent decision of the appellate division in New York [1] had the rather interesting result of making a patient the vehicle through which a physician was admitted to practice in a public hospital even though he was not a member of its active staff.

In other cases in which the right of a physician to practice in a public hospital has been in issue, the courts, if they held for the hospital, also held that the physician was thereby totally barred from using the hospital's facilities. In the Alpert case, the court held that staff membership is not necessary in order for a physician to utilize the facilities of a public hospital. It was decided that it is only necessary that the patient desire to be treated in that hospital. The decision, in effect, created a courtesy staff where none had existed before.

The city hospital of Fulton, N. Y., is publicly owned, controlled, and financed. Its affairs are managed by a board of directors that has been granted full power to make rules and regulations. Pursuant to this authority the hospital adopted certain rules, which provide, in part: "*Section 1.* Patients may be treated only by physicians and surgeons who have submitted

proper credentials to the Board of Governors. Such surgeon or physician must be a graduate of a recognized medical school, legally licensed to practice medicine in the State of New York and a member of the County Medical Society where he is located and practicing medicine. *Section 2.* Any physician or surgeon wilfully violating any rule or regulation of the hospital may be denied the use of the hospital."

The bylaws of the medical staff contain substantially the same requirements for membership and provide for staff appointments to be made by the board of governors for a term of one year.

The petitioner was licensed to practice medicine in New York in 1938 and was accepted for membership on the active staff of the hospital in 1946. He remained a member of the staff until that membership was terminated in 1955 by the board of directors of the hospital. This termination not only excluded him from the hospital, it denied him reappointment to the medical staff. Thus any of his patients requiring hospitalization were required either to change physicians or go to another hospital in a distant town. The petitioner contended that such action would destroy his practice and deprive him of the right to practice medicine in that area. The facts developed in the case disclosed that the physician had advanced training and experience in medicine and surgery, that he had developed a large practice, and had a substantial investment in his office and facilities in Fulton. He alleged that the determination of the board was arbitrary and without due process of law, since he received no notice and was not granted a hearing prior to the board's ruling.

The board alleged that its determination "was reached only after a careful and mature consideration of a multitude of condemning facts and circumstances which overwhelmingly justified" its action. It contended, further, that it had uncontrolled discretion in the management of the hospital and that no court could presume to review or correct its official acts. Judicial control of administrative conduct, said the court, must be reasonable. It was pointed out that courts have often held that a regularly licensed physician cannot be denied the use of a public hospital by the operation of unreasonable rules and regulations. In this case, continued the court, the regulation itself was reasonable and the petitioner fully met its requirements. The hospital, however, relying upon the lack of any expressed limitations upon its authority, went ahead and unreasonably and arbitrarily excluded him from the use of the hospital. It did not give him either notice or hearing prior to its action. The court held that there are limitations upon the powers of the respondent hospital even though none are expressly stated in the law. These limitations are implied, said the court, by the very nature of a public hospital and also by the constitutional protection given to valuable interests.

Regulations must be consonant with the purposes of the institution for which they are made. The board undoubtedly had some discretion in excluding patients, said the court, but held that all must be accepted in a public hospital who genuinely require hospitalization and for whose ailments the hospital possesses the required facilities. For example, a regulation excluding all patients over 30 years of age or a regulation excluding all physicians but one would be void. Such regulations would convert the hospital into a private clinic. Further, the court continued, if the right of the general public to use the hospital is to have any meaning, they must have the concurrent right to be treated by their own physicians, unless the latter are excluded for adequate cause. The nature of a public hospital imposes an actual, although implied, limitation upon the authority to restrict arbitrarily the use of the hospital by the public, whether a physician or a patient.

In one sense, said the court, there is no constitutional right to practice medicine in a public hospital any more than there is an absolute right to sell alcoholic beverages or to drive an automobile. Valuable privileges, however, are entitled to the protection of law. The petitioner has enjoyed the use of the Fulton city hospital since 1946. On the record before the court, it appears that he is a capable and qualified surgeon who has developed a large practice representing a substantial investment. The determination complained of, in effect, deprives him of the right to practice medicine in the area of Fulton without notice of charges and without hearing. There was in this case a lack of procedural due process in arriving at the determination. "We conclude," said the court, "that a qualified physician admitted to practice in a public hospital acquires a species of tenure and cannot be capriciously excluded, and thereby injured financially and professionally, without notice and an opportunity to be heard."

The petitioner was therefore entitled to use the facilities of the hospital for the treatment of his patients. He was not, however, entitled to be reinstated as a member of the active staff, which consists of "those physicians who have been selected to regularly attend patients in the hospital and to whom all patients shall be assigned." Appointments to the medical staff are made by the board for a term of one year, and the respondent's failure to reappoint him to the staff gives rise to no legal remedy, nor is such reappointment necessary. He may use the facilities without staff membership so long as he obeys all reasonable rules and regulations and gives no cause for his removal. This result gives the board a free hand to control the internal management of the hospital.

For what seems to be the first time the court recognized two concurrent rights not previously separated: staff membership on the one hand and the right of a physician to use the facilities of a hospital for the treatment of his private patients regardless of staff membership.

One of the logical results of this decision is that, at least in New York, a physician may take advantage of all of the facilities that a modern, well-equipped hospital may possess without having to participate in any way in caring for the charity patients and emergency patients who are served by that hospital. Only the staff members are obligated to perform those activities. The plaintiff was given the rights of staff membership without having to assume the obligations.

1. Application of *Alpert* v. *The Board of Governors of the City Hospital of Fulton*, 145 N. Y. S. (2) 534.

MEDICAL NEWS

ARKANSAS

Conference for the Handicapped.—An Arkansas Conference for the Handicapped has been scheduled for Oct. 9-10 at the Marion Hotel in Little Rock. Complete financial support for the conference is being furnished by the Nemours Foundation, Wilmington, Del., a charitable corporation for the furtherance of work with the handicapped child. The objectives of the conference are (1) to evaluate the presently available resources for meeting the needs of the handicapped in Arkansas, (2) to determine the present unmet needs for a program of adequate care for the handicapped, and (3) to set the course for a coordinated program for the handicapped in Arkansas.

CALIFORNIA

Course on Gastroenterology.—A course in Pathological Physiology of the Gastrointestinal Tract (limited to 30 students) will be offered on Wednesdays, 7:30-9:30 p.m., Sept. 12-Nov. 21 at the University of California Medical Center, Los Angeles, under the auspices of University Extension. The course chairman is Dr. Ralph R. Sonnenschein, associate professor of physiology. Requests for applications or information should be made to: Dr. Thomas H. Sternberg, Assistant Dean for Postgraduate Medical Education, Los Angeles 24.

COLORADO

State Medical Meeting in Estes Park.—The 86th annual session of the Colorado State Medical Society will convene at the Stanley Hotel, Estes Park, Sept. 5-8 under the presidency of Dr. Robert T. Porter, Greeley. The opening session, Wednesday morning, will be devoted to the following program on "Future of Medical Practice":

Views of Labor on Medical Care, William A. Sawyer, Rochester, N. Y.
Supermarket Medicine, Francis T. Hodges, San Francisco.
A Physician's Concept of the Future of Medicine, Joseph D. McCarthy, Omaha.

Panel discussion will follow.

The topic for Thursday morning will be "Radioactive Isotopes in Diagnosis and Treatment." The incoming president, Dr. George R. Buck, Denver, will deliver his presidential address at 10 a.m. Dr. John H. Lawrence, Berkeley, Calif., will present "Diagnostic and Therapeutic Applications of Radioactive Isotopes and Nuclear Radiations in Medicine" immediately preceding the noon panel discussion of the morning presentations. A noon panel discussion will also be held after the Friday morning program on "The Patient, the Doctor, and the Hospital," which will include the following papers by out-of-state speakers:

The Hospital's Responsibility to the Patient, Mr. George Bubgee, New York City.
The Generalist, the Hospital, and the A. M. A., John S. DeTar, Milan, Mich.
The Specialist and the Hospital, Leland S. McKittrick, Brookline, Mass.
Accreditation, Its Purposes and Problems, Kenneth B. Babcock, Chicago.

A symposium on vertigo will conclude the Saturday session on neurological disorders. The sports events program includes bowling and fishing and a golf tournament, which is scheduled for Wednesday at the Estes Park Golf Club. Prizes will be awarded at the banquet on Friday. The women's auxiliary will meet concurrently.

CONNECTICUT

Symposium on Occupational Noise.—A conference will be presented Sept. 17 by the Yale University School of Medicine (department of surgery, section of otolaryngology, and department of public health, section of occupational health) and the Grace-New Haven Community Hospital (Hearing and Speech Center) in cooperation with the Liberty Mutual Insurance Company. The day-long session will end with panel discussions of noise and its measurement, effects of noise on man, legal and economic aspects of noise, a comprehensive conservation of hearing program, and prevention of hearing loss by engineering control. Physicians participating will include Dr. Aram Glorig Jr., Los Angeles, director of research, subcommittee of noise in industry, American Academy of Ophthalmology and Otolaryngology, and Dr. Meyer Fox, chief, ear, nose, and throat department, Mount Sinai Hospital, Milwaukee. The conference, planned for industrial executives, physicians, safety engineers, and others who are concerned with problems of occupational noise, will be held at Fitkin Amphitheater, Yale-New Haven Medical Center, 789 Howard Ave., New Haven. The fee, $15, includes luncheon. Only those who have registered in advance will be admitted. Further information may be obtained by writing to the Assistant Dean of Postgraduate Medical Education, Yale University School of Medicine, 333 Cedar St., New Haven 11.

GEORGIA

Society News.—The Georgia Society of Ophthalmology and Otolaryngology recently elected Dr. William L. Barton, Macon, president; Dr. F. Phinizy Calhoun Jr., Atlanta, vice-president; and Dr. Walter P. Rhyne, Albany, secretary-treasurer. The 1957 meeting will be held aboard ship, cruising from Charleston, S. C., to Nassau in the Bahamas, in April.

Meeting of Heart Association.—The eighth annual meeting and scientific sessions of the Georgia Heart Association will be held Sept. 14-15 at the General Oglethorpe Hotel, Savannah. Registration is free to all physicians, interns, and medical students. Out-of-state speakers and their presentations will include:

Robert P. Glover, director, Thoracic and Cardiovascular Research Laboratory, Presbyterian Hospital, Philadelphia, A Comparison of Long-Term Results in Mitral and Aortic Stenosis. Experimental and Clinical Results of Surgery for Mitral Insufficiency Employing Circumferential Constriction of the Mitral Annulus.
Stewart G. Wolf, professor and head of the department of medicine, University of Oklahoma School of Medicine, Oklahoma City, Preliminary Study of Lipoproteins and Life Adjustment in Coronary Occlusion. Personality and Hypertension.
William B. Schwartz, assistant professor of medicine, Tufts College Medical School, Boston, Electrolyte Problems in Congestive Heart Failure—Parts I and II.
Eugene A. Stead Jr., professor of medicine, Duke University School of Medicine, Durham, N. C., Low Fat Cookery. The Autonomic Nervous System and the Circulation.

MICHIGAN

Medical Alumni Conference.—The sixth triennial Medical Alumni Conference of the University of Michigan Medical School will meet in Ann Arbor, Sept. 27-29. A special program of scientific presentations, panels, and clinics has been arranged. The social program includes a banquet, special convocation of the medical school, and the Michigan–University of California at Los Angeles football game. Information on housing, program, and reservations can be obtained by writing to Dr. Albert C. Furstenberg, Dean, University of Michigan Medical School, Ann Arbor.

NEBRASKA

Crippled Children's Clinics.—Crippled children's clinics have been scheduled for Sept. 8 at the Senior High School Building, North Platte, and Sept. 22 at the Elks Club, Chadron.

University News.—Dr. John B. Davis, Omaha, who has just completed a four-year residency in surgery at the Research and Educational Hospitals, University of Illinois, Chicago, has been appointed a clinical assistant in surgery at his alma mater, the University of Nebraska College of Medicine, Omaha. Dr. Davis has become the third generation of his family to join the faculty

---

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

of the University of Nebraska College of Medicine. Both his father, Dr. Herbert H. Davis, and his grandfather, the late Dr. Byron B. Davis, have served as chairman of the department of surgery.

NEW YORK

Dr. Hoch Honored.—Dr. Paul H. Hoch, commissioner of mental hygiene for the state of New York, has been given the Man of the Year award of the International Rho Pi Phi Pharmaceutical Fraternity. The award cited Dr. Hoch for his "outstanding leadership in the research and treatment of mental illness, and his dedication to the welfare of its victims." Dr. Hoch joined the staff of the New York State Psychiatric Institute in 1943 and became director of the department of experimental psychiatry in 1948. He is also associate professor of clinical psychiatry at Columbia University College of Physicians and Surgeons, New York City, and an attending psychiatrist in the university's Psychoanalytic Clinic for Training and Research. Last year he received the Adolf Meyer Memorial award for his outstanding work in psychiatric research.

New York City

Personal.—Dr. Harold Brandaleone, assistant clinical professor of medicine (assigned to rehabilitation) at the New York College of Medicine, has been elected treasurer of the Alumni Federation of New York University, which in 1954-1955 he served as president. Dr. Brandaleone is president of the New York State Society of Industrial Medicine and medical director of the Third Avenue Transit System.——Dr. John H. Garlock, clinical professor of surgery at Columbia University College of Physicians and Surgeons and director of surgery at the Mount Sinai Hospital, is on an extended teaching tour of South America, where he is scheduled to give a series of lectures and hold didactic operative clinics in important medical centers. His itinerary includes Colombia, Chile, Peru, Argentina, and Brazil.——The American College of Surgeons awarded its third research scholarship to Dr. Sigmund A. Wesolowski, then assistant instructor in surgery at the State University of New York College of Medicine at New York City, Brooklyn, and a resident in surgery at Kings County Hospital. The scholarship, established in 1952 to support promising young surgeons who are interested in academic surgery and to promote surgical research, pays the recipient $20,000 over three years. On July 1, Dr. Wesolowski completed his residency training at Kings County Hospital and was promoted to instructor on the state university faculty, where he will devote full time to teaching and research. He hopes to spend a year in England during the period of the scholarship to study cardiovascular surgery under Sir Russell Brock at Guy's Hospital, London. During the war, as captain in the Army Medical Corps, Dr. Wesolowski did research in cardiovascular surgery at Walter Reed Army Hospital, Washington, D. C., for two years.——Drs. M. Ralph Kaufman, chief of psychiatry at Mount Sinai Hospital, and John A. Millet, who is affiliated with Presbyterian Hospital, have been named as consultants to the New York State Department of Mental Hygiene. Both men were charter members of the State Mental Hygiene Council and recently completed their terms of office after serving five years. Dr. Kaufman, who is clinical professor of psychiatry at the Columbia University College of Physicians and Surgeons, is a neuropsychiatric consultant to the surgeon general of the Department of the Army. He is the author of more than 30 papers on psychiatry and psychoanalysis.

NORTH CAROLINA

Meeting of Heart Association.—The annual meeting of the North Carolina Heart Association will be held at the Battery Park Hotel in Asheville Sept. 15-16 under the chairmanship of Dr. James V. Warren, Durham. The featured speaker will be Dr. Robert W. Wilkins, Boston, president of the Massachusetts Heart Association and vice-president of the American Heart Association. The theme of the session will be "Prevention of Coronary Heart Disease." A program on health education under the chairmanship of Dr. William L. Fleming of the University of North Carolina School of Medicine, Chapel Hill, has been scheduled for Saturday morning. All physicians are invited to attend this and other sessions of the association.

OHIO

Courses in Occupational Health for Nurses.—A series of courses in Occupational Health for Registered Nurses is offered by the Institute of Industrial Health of the University of Cincinnati College of Medicine to acquaint nurses already in industry, as well as other interested nurses, with current concepts and practices in the field of occupational health. The first lecture course, scheduled for the fall semester of 1956, will consist of 16 weekly evening sessions. The second lecture course, scheduled for the spring of 1957, will be concentrated in a period of one week, full time. The faculty for both courses, to be held at the college of medicine, will be composed of members of the college, representatives of the nursing profession, management, and other recognized authorities in this field. The registration fee is $25. For additional information write: Secretary, Institute of Industrial Health, College of Medicine, Cincinnati 19.

UTAH

State Medical Meeting in Salt Lake City.—The 61st annual meeting of the Utah State Medical Association will convene at the Hotel Utah, Salt Lake City, Sept. 5-8, under the presidency of Dr. Ralph O. Porter, Logan. At the president's banquet for doctors and their wives Friday evening, Dr. Dwight H. Murray, Napa, Calif., President of the American Medical Association, will have as his subject "The Physician and His Hospital." Other guest speakers and their first presentations will include:

Mark M. Ravitch, Baltimore, Surgical Approach to Ulcerative Colitis.
Harris B. Shumacker Jr., Indianapolis, Management of Abdominal Aortic Aneurysms.
Ralph K. Ghormley, Rochester, Minn., Present Status of Surgery of the Hip Joint (accompanied by film).
Lowell A. Rantz, San Francisco, Modern Management of Rheumatic Fever.
Russell R. de Alvarez, Seattle, Bleeding of Late Pregnancy.
Mr. Harry Becker, Chicago, Voluntary Prepayment Insurance at the Crossroads.
Henry M. Weyrauch Jr., San Francisco, Modern Treatment of Urinary Infection.
Robert A. Aldrich, Portland, Ore., Present Status of Tuberculosis in Childhood.
Hugh F. Hare, Los Angeles, Radiation Treatment of Carcinoma of the Breast.
Charles R. B. Blackburn, Sydney, Australia, Contraindications for Adrenalectomy in Carcinomatosis—A Physician's Appraisal.
Howard P. House, Los Angeles, The Doctor's Responsibility to the Hearing Handicapped.

Morning sessions will open at 8 a. m. with motion pictures. On Thursday at 10:50 a. m. Dr. Russell M. Nelson, Salt Lake City, will serve as moderator for a symposium on intestinal obstruction. Panel discussions on surgery and on obstetrics and pediatrics are scheduled for noon luncheon meetings. The Friday symposium (10:50 a. m.), "Current Topics in Internal Medicine," will be sponsored by the department of medicine, University of Utah School of Medicine, Salt Lake City, and will have as moderator Dr. Maxwell M. Wintrobe. Noon luncheon discussions Friday will be on internal medicine, pediatrics, and urology. At 3:20 p. m. the specialty groups will have panel discussions with guest speakers participating. The women's auxiliary will meet Sept. 6-7.

VERMONT

Personal.—Dr. Bernis D. Colby, Sudbury, honorary member of the Rutland County and the Vermont State Medical societies, received the honorary degree of doctor of science at the annual commencement of the University of Vermont, Burlington.

Symposium on Electrolytes.—A Symposium on Electrolytes and the Circulation, open to all interested persons, will be held in Burlington, Sept. 8-10, under the sponsorship of the Vermont Heart Association and the University of Vermont College of Medicine, Burlington. Topics will include the electrolyte metabolism in congestive heart failure and the role of electrolytes in myocardial metabolism, the electrocardiogram and cardiac arrhythmias, and vascular reactivity and hypertension. Further information can be obtained from Dr. Eugene Lepeschkin, University of Vermont College of Medicine, Burlington.

WISCONSIN

Head of Orthopedic Surgery.—Dr. Walter P. Blount, chief of orthopedics at Milwaukee Children's Hospital, has been ap-

pointed clinical professor and director of the department of orthopedic surgery at Marquette University School of Medicine, succeeding the late Dr. Herman Schumm.

"Dr. Kate" Fund.—A special Doctor Kate Newcomb Memorial fund has been established by the Wisconsin chapter of the Arthritis and Rheumatism Foundation. The fund will be used to purchase a hydrotherapy tank for Lakeland Memorial Hospital in Woodruff. The chapter will also present a 5-ft. portrait of Dr. Kate to the hospital, which she built with penny contributions. Because of her unexpected death, the chapter canceled a testimonial dinner. Those who planned to attend the testimonial have been asked to contribute to the memorial fund.

Personal.—Dr. John S. Horning, Milwaukee, left for Costa Rica in August to take a year of language study, preparatory to setting up a medical clinic among the Quechua Indians near Quito, Ecuador.——Dr. Harold M. Coon, superintendent of the University Hospitals, Madison, since 1941, has been appointed administrator of Milwaukee County Hospital as of Sept. 1, to succeed Dr. Harry W. Sargeant, who will retire Nov. 27. Dr. Coon, who serves also as professor of hospital administration at the University of Wisconsin Medical School, is the son of the late Dr. John W. Coon, who was superintendent of the county hospital for about one year.

Circuit Teaching Programs.—The council on scientific work of the State Medical Society of Wisconsin (in cooperation with the state board of health, the medical schools of the University of Wisconsin in Madison and Marquette University in Milwaukee, the Wisconsin Academy of General Practice, the Wisconsin Heart Association, Wisconsin Anti-Tuberculosis Association, and the Wisconsin division of the American Cancer Society) has scheduled a series of 12 circuit teaching programs. During September these clinics will be held at the St. Francis Hospital, La Crosse, Sept. 11; Sacred Heart Hospital, Eau Claire, Sept. 12; and St. Mary's Hospital, Superior, Sept. 13. The faculty will consist of Drs. John Z. Bowers, Madison, arthritis; George R. Barnes, Iowa City, pediatrics; James E. Conley, Milwaukee, surgery; and Donald M. Ruch, Milwaukee, dermatology. The registration fee, which covers a full afternoon and evening of instruction and dinner, is $6. Participants are requested to attend both sessions, as the meetings will be correlated, and those who attend both sessions will receive credit for Academy of General Practice membership requirements. Requests for reservations should be sent to the State Medical Society of Wisconsin, P. O. Box 1109, Madison.

GENERAL

Meeting on Instrumentation.—The Instrument Society of America will hold its 11th annual meeting in the new Coliseum, New York City, Sept. 17-21. The program lists presentations on recent developments in medical and biological instrumentation, including Photo Counters for Chromatographic Densitometry in the U. V. Region, Electrical Method for Objective Determination of Blood Pressure Utilizing Standard Electrocardiographs, New Artificial Respiration Machine, Heat Flow Transducer with Indicating and Recording Equipment for Physiological and Biochemical Research, Automatic Particle and Bacterial Colony Counter, Counter-Current Distribution Apparatus Using 3-Phase Solven System, Low Frequency Analyzers in Electroencephalography, and Research on Mechano-Electronic Transducer Blood Pressure Manometers.

Nuclear Scientists Invite Papers.—The American Nuclear Society invites the submission of papers for its meeting Dec. 10-12 in the Sheraton-Park Hotel, Washington, D. C. The society was formed about 18 months ago in response to a demand for a single organization encompassing all the professional disciplines of science and engineering applying to the atomic energy field. Authors desiring to present papers at the December meeting are requested to send titles and estimates of presentation time to L. D. O. King, Ph.D., Los Alamos Scientific Laboratory, P. O. Box 1663, Los Alamos, N. Mex., by Oct. 1. Abstracts of the papers must be received not later than Nov. 1. The society publishes its own journal, *Nuclear Science and Engineering*. Contributors to the journal should send their papers to J. G. Beckerley, Ph.D., P. O. Box 2175, Houston, Texas.

Conference on Clinic Organization.—A symposium, "Policies and Methods of Determining Income of Physicians," scheduled for Friday noon, will be a program feature of the West Coast Conference on Financial and Human Problems of Clinic Organization in Santa Barbara, Calif., Sept. 21-23. According to the University of California at Los Angeles School of Medicine, School of Public Health, and University of California Extension, which are planning the conference in cooperation with the National Association of Clinic Managers, Western Section, such problems as financial insurance and legal aspects of clinic management will be considered. Numerous intensive study groups, as well as a tour of local clinics and the new campus of the University of California, are planned. Registration for the conference is being accepted at the offices of University of California Extension, Los Angeles 24. Fee for the session is $50.

Conference on Pharmacotherapy in Mental Illness.—A conference on the evaluation of research on pharmacotherapy in mental illness will be held at the Hotel Statler in Washington, D. C., Sept. 21-22 under the joint sponsorship of the division of medical sciences of the National Academy of Sciences—National Research Council, the National Institute of Mental Health, and the American Psychiatric Association, with Dr. Ralph W. Gerard, Chicago, as leader. The conference will be based on presentations of several *ad hoc* working groups, whose reports on the methodological, theoretical, and administrative problems involved in evaluating tranquilizing and other drugs, both at preclinical and clinical levels, will be reviewed in closed committee sessions during the two preceding days. Those interested in attending the conference should write to the executive secretary of the project, Dr. Jonathan O. Cole, National Academy of Sciences, 2101 Constitution Ave., Washington 25, D. C.

Northwest Association of Occupational Medicine.—The Northwest Association of Occupational Medicine was recently organized, with Dr. Eugene P. Owen of Portland, Ore., as president; Dr. Wilhelm J. Sittner, Portland, Ore., secretary; Dr. Charles M. McGill, Tacoma, Wash., vice-president; and Dr. Bradford C. Scudder of Hanford, Calif., and Dr. Forrest E. Rieke, Portland, Ore., board members. The association will hold its first technical meeting Sept. 9, the day before the opening of the third annual Northwest Industrial Health Conference. Speakers at the technical meeting will include Drs. Hedwig S. Kuhn, Hammond, Ind.; Jermyn F. McCahan, Boston; R. Christopher Leggo, Palo Alto, Calif.; Roger Anderson, Seattle; William J. McNamara, New York; and Mr. William Lawrence, attorney from Seattle. The meeting will be open to all interested physicians, nurses, attorneys, insurance representatives, and lay officials of health agencies. The association, with membership in Oregon, Washington, Idaho, British Columbia, and Alaska, is open to qualified physicians whose practices are partly or entirely devoted to industrial medicine or surgery.

Borden Award in Nutrition.—Nominations are solicited for the 1957 award and gold medal made available by the Borden Company Foundation, Inc. The American Institute of Nutrition will make this award in recognition of distinctive research by investigators in the United States and Canada that has emphasized the nutritive significance of the components of milk or of dairy products. The award will be made primarily for the publication of specific papers during the previous calendar year, but the jury of award may recommend that it be given for important contributions made over a more extended period of time. Nominations, which may be made by anyone, should include the name of the award for which the candidate is proposed and a statement as to the basis of the nomination (this may include a pertinent bibliography, but reprints are not required). To be considered for the 1957 award, five copies of all documents, including seconding statements, must be sent before Jan. 1, 1957, to the chairman of the nominating committee, Cosmo G. Mackenzie, Sc.D., Department of Biochemistry, University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver 7.

Essay Contest in Dermatology.—The American Dermatological Association offers a series of awards for original work not previously published and relative to some fundamental aspect of dermatology or syphilology: $500, $400, $300, and $200 for first, second, third, and fourth places respectively. Manuscripts,

not exceeding 10,000 words, typed in English with double spacing and ample margins as for publication, together with illustrations, charts, and tables, all of which must be in triplicate, are to be submitted not later than Nov. 15 to Dr. J. Lamar Callaway, Secretary, American Dermatological Association, Duke Hospital, Durham, N. C. Papers should be submitted under a nom de plume and should be accompanied by a plain sealed envelope bearing the nom de plume and the full name and address of the author. Competition is open to scientists generally—not exclusively to physicians. The results will be announced before Jan. 1, 1957. The candidate winning first award may be invited to present his paper before the annual meeting of the American Dermatological Association with expenses paid, in addition to the award. Further information regarding this essay contest may be obtained by writing to the secretary of the association.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States and its territories and possessions in the weeks ended as indicated:

Area	Aug. 4, 1956: Paralytic Type	Aug. 4, 1956: Total Cases Reported	Aug. 6, 1955, Total
New England States			
Maine	..	..	11
New Hampshire	..	..	16
Vermont	1	2	2
Massachusetts	..	5	309
Rhode Island	..	4	19
Connecticut	..	1	38
Middle Atlantic States			
New York	8	25	102
New Jersey	2	6	21
Pennsylvania	..	10	30
East North Central States			
Ohio	4	30	42
Indiana	9	16	28
Illinois	105	181	68
Michigan	6	26	78
Wisconsin	8	17	105
West North Central States			
Minnesota	2	6	28
Iowa	1	26	45
Missouri	4	17	9
North Dakota	..	..	2
South Dakota	..	4	8
Nebraska	3	11	28
Kansas	3	9	19
South Atlantic States			
Delaware	..	..	7
Maryland	4	5	8
District of Columbia	..	1	5
Virginia	7	12	25
West Virginia	1	4	6
North Carolina	7	12	23
South Carolina	..	2	21
Georgia	4	14	15
Florida	4	9	12
East South Central States			
Kentucky	..	4	37
Tennessee	5	9	6
Alabama	..	2	4
Mississippi	2	4	9
West South Central States			
Arkansas	11	17	9
Louisiana	28	42	14
Oklahoma	3	12	21
Texas	30	47	81
Mountain States			
Montana	1	1	4
Idaho	3	6	16
Wyoming	1	2	..
Colorado	4	9	9
New Mexico	1	4	6
Arizona	3	4	4
Utah	..	17	1
Nevada	..	4	2
Pacific States			
Washington	1	6	13
Oregon	4	10	10
California	51	104	33
Territories and Possessions			
Alaska	..	..	2
Hawaii	1	1	8
Puerto Rico	..	..	4
Total	332	760	1,423

Congress on Clinical Chemistry.—The first International Congress of Clinical Chemistry will convene Sept. 9-14 at the Hotel Barbizon-Plaza, New York, under the auspices of the American Association of Clinical Chemists. A session on electrolytes, dedicated to the memory of Dr. John P. Peters, author of "Quantitative Clinical Chemistry," is planned for Monday morning. Other topics of the congress include: lipids and cholesterol, blood and bile pigments, standardization of clinical chemical measurements, and enzymes and vitamins. A symposium on proteins is scheduled for Friday morning. The program includes a reception Monday evening and a dinner Tuesday evening. Information and registration forms may be obtained from the congress secretary, John G. Reinhold, Ph.D., 711 Maloney Bldg., University of Pennsylvania, Philadelphia 4. Membership applications should be sent with $7.50 to the secretary. A week-end tour of Philadelphia and Washington has been planned especially for visitors from outside the country; others may participate, if space is available. The complete cost (excluding tips) will be $35 to $40. The tour will leave New York Saturday morning, spend Saturday in Philadelphia, proceed to Washington Sunday, and, after sight-seeing, visit the National Institutes of Health in Bethesda, Md., and other laboratories, if time permits, on Monday. It will end in Atlantic City, N. J., Monday evening. Those interested should inform Dr. Harry Goldenberg, Hillside Hospital, Glen Oaks, N. Y. Tickets will be on sale at the congress.

Memorial Hospitals Dedicated.—On June 2, 150 years after the initiation of coal mining in the United States, the following memorial hospitals were dedicated by John L. Lewis, chairman of the board of trustees, United Mine Workers of America Welfare and Retirement Fund, "in memory of those men who died without hospitals": Harlan (Ky.) Memorial Hospital, McDowell (Ky.) Memorial Hospital, Middlesboro (Ky.) Memorial Hospital, Wise (Va.) Memorial Hospital, Hazard (Ky.) Memorial Hospital, Whitesburg (Ky.) Memorial Hospital, Beckley (W. Va.) Memorial Hospital, Man (W. Va.) Memorial Hospital, Pikeville (Ky.) Memorial Hospital, and Williamson (W. Va.) Memorial Medical Center. The 10 hospitals, forming a three-state network (THE JOURNAL, March 27, 1954, pages 1101-1103; June 18, 1955, page 571) were "consecrated to the care of the sick, the prevention of disease, and the preservation of the health of the people, as far as they can reach. They will serve as the nucleus and inspiration for the development of other vital services around them." Physicians who addressed the meeting included Dr. Elmer Hess, Erie, Pa., then President of the American Medical Association; Dr. Warren F. Draper, Washington, D. C., executive medical officer, United Mine Workers of America Welfare and Retirement Fund; Dr. Frederick D. Mott, Washington, D. C., medical administrator, Miners Memorial Hospital Association; and Dr. Howard A. Rusk, chairman of the department of rehabilitation and physical medicine, New York University College of Medicine, New York City.

Research Grants and Fellowships in Cardiology.—The Chicago Heart Association, 69 W. Washington St., Chicago 2, offers grants-in-aid for the fiscal year, July 1-June 30, that may be renewed on application and annual review. Completed application is due Nov. 1, to be effective the following July 1. For information and forms write to: Chicago Heart Association, Attention: Program Coordinator.—The American Heart Association, 44 E. 23rd St., New York 10, provides (1) established investigatorships ($6,000-$9,000 a year) for one to five years, subject to annual review (application deadline, Sept. 15); (2) grants-in-aid for equipment, technical assistance, and supplies to experienced scientists working on approved projects for one to five years (application deadline, Nov. 1); and (3) research fellowships ($3,500-$5,600 a year) for one to two years to young scientists to train in research under experienced supervision (application deadline, Sept. 15). For information write to: Medical Director, American Heart Association.—The National Institutes of Health, Division of Research Grants, Bethesda 14, Md., awards (1) research grants for any research directly or indirectly related to problems of health or disease, without limitation on the size of a grant, the number of grants, the total amount awarded in research grants that may be made to any one investigator or any one institution in a fiscal year, or requirement of matching research grant funds; (2) research fellowships, including predoctoral research fellowships ($1,400; first year of

graduate study $1,600; terminal year $1,800 plus $350 for each dependent; a minimum basic tuition allowance); (3) postdoctoral research fellowships ($3,400 a year plus $350 for each dependent; plus $300 on renewal for second and third year; plus $500 to the institution to defray expenses); and (4) special research fellowships, determined by the surgeon general at the time of the award. For information and forms write directly to the Division of Research Grants, National Institutes of Health, Bethesda 14, Md.——The Life Insurance Medical Research Fund, 345 E. 46th St., New York 17, offers (1) postdoctoral fellowships for research training in cardiovascular function or disease, with consent of an experienced investigator to serve as a supervisor (minimum $3,800 per year with allowances for dependents; an increase of $300 on renewal; $500 to institution to help defray expenses) for 12 months beginning on any one of the following dates: July 1, Aug. 1, Sept. 1, Oct. 1, with complete application for 1957-1958 fellowship year due Oct. 15, 1956, and (2) grants-in-aid for research broadly concerned with cardiovascular disease or function (usual range: $1,000-$15,000 a year), with complete applications for 1957 grants, including renewals, due Nov. 1, 1956. For information and forms, sponsors should correspond with: Dr. Francis R. Dieuaide, New York, Scientific Director.

FOREIGN

Meeting on Industrial Medicine.—The Austrian Society for Industrial Medicine announces that the third Austrian Congress on Industrial Medicine will be held in Vienna, Oct. 1-4, to discuss "Success by Early Diagnosis and Preventive Measures." The subjects will include:

Medical examination for fitness and ensuing selection; examinations with regard to employment or reemployment.
Prevention of poisoning by proximate causes (technical expedients).
Prevention of illness (periodical examination and transfer to another post; medical prophylaxis).
Prevention of damages caused by prolonged work under conditions detrimental to health (violent motion and draught; prevention of accidents).
Economic value and advantages of preventive measures taken by industrial medicine.

Persons interested in attending or in reading papers on these subjects may apply to the Organizing Secretary, Dr. Ch. Frieberger, Austrian Society for Industrial Medicine, Kinderspitalgasse 15, Vienna, Austria. There is no registration fee.

Congress on Speech and Voice Therapy.—The 10th Congress of the International Association of Logopedics and Phoniatrics will convene in Barcelona, Spain, Sept. 3-7. Reports will be presented on "Studies of the Onset and Development of Stuttering," "Neurology and Speech and Language Disorders," "Nonverbal Tests of Intelligence and Maturity," and "Amusia." Further details may be obtained from the Organizing Secretary: Dr. J. Perello, Provenza, 319, Barcelona (9), Spain.

Congress on the History of Science.—The eighth International Congress for the History of Science will convene in Florence, Italy, Sept. 3-9 under the auspices of the International Academy and the International Union for the History of Science. The program will include a session on the history of chemistry and pharmacy and a session on the history of medicine and biology. Information may be obtained from the Office of the Secretary General, Dr. M. L. Bonelli, Instituto di Ottica, Arcetri, Florence, Italy.

Congress on Dietetics.—The second International Congress of Dietetics will be held in Rome, Italy, Sept. 10-14, in the Congress Palace of Esposizione Universale Roma. The Italian Dietetic Association will be the host. The program will include recent findings of nutritional research, methods of education in nutrition, principles and problems of feeding large numbers of people, and problems of training dietitians. All persons interested in nutrition and dietetics may attend sessions of the congress on payment of the registration fee. Participants in the program will include Charlotte M. Young, Ph.D., professor of medical nutrition, Cornell University, Ithaca, N. Y., who will contribute to a symposium on obesity; Alice H. Smith, chief nutritionist of the Michigan Department of Health, who will speak on the "Educational and Social Aspects of Malnutrition in Relation to Tuberculosis"; and Jean Mayer, Ph.D., associate professor of nutrition, Harvard University, Boston, who will be a member of the discussion group concerned with "Obesity: A Nutritional Problem of Increasing Importance and Its Relationship to Economics, Social and Health Conditions." An entire morning will be devoted to programs on child feeding. Information on the congress and postcongress tours may be obtained from the American Dietetic Association, 620 N. Michigan Ave., Chicago 11.

CORRECTION

Dr. Huebner's Name Misspelled.—In the leading article in THE JOURNAL of Aug. 18, 1956, on page 1521 and on THE JOURNAL cover, the third author's name was misspelled and should read "Robert J. Huebner, M.D., Bethesda, Md."

EXAMINATIONS AND LICENSURE

AMERICAN BOARD OF DERMATOLOGY: *Oral.* St. Louis, Oct. 12-15. Final date for filing applications was April 1. Sec., Dr. B. M. Kesten, One Haven Ave., New York 32.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Oct. 15, 1956. Final date for filing application was May 1. *Oral Examinations in 1956.* New York City, Sept. 21-25. Final date for filing application was April 1. Exec. Sec., Dr. William A. Werrell, 1 West Main St., Madison 3, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: Examination given twice annually, in the spring and fall. In order to be eligible a candidate must have his application filed at least six months before the examination time. Sec., Dr. Leonard T. Furlow, Washington University School of Medicine, St. Louis 10.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Part I.* 1957. Applications for certification for the 1957 examinations are now being accepted. Candidates making new application or requesting the reopening of an application must do so before Oct. 1, 1956. Applications are to be accompanied by a list of hospital admissions. *Written. Part I.* Various cities of the United States, Canada and military centers outside the continental United States, Feb. 1. Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6.

AMERICAN BOARD OF OPHTHALMOLOGY: *Practical Examination.* St. Louis, Oct. 20-24. *Written.* Jan. 21, 1957. Applications must be filed before July 1, 1956. Sec., Dr. Merrill J. King, Box 236, Cape Cottage Branch, Portland 9, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Oral. Part II.* Chicago, January 1957. Final date for filing application is Aug. 15. Sec., Dr. Sam W. Banks, 116 South Michigan Ave., Chicago 3.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Written and Oral.* Chicago, Oct. 8-11. Sec., Dr. Dean M. Lierle, University Hospitals, Iowa City.

AMERICAN BOARD OF PATHOLOGY: *Written for Pathological Anatomy and Clinical Pathology,* Oct. 4-6. Final date for filing application is Sept. 1. Sec., Dr. Edward B. Smith, 1040-1232 W. Michigan St., Indianapolis 7.

AMERICAN BOARD OF PEDIATRICS: *Oral, Part II.* New York City, Oct. 12-14, and San Francisco, Dec. 7-9. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

AMERICAN BOARD OF PLASTIC SURGERY: Miami, Oct. 17-19. Corres. Sec., Mrs. Estelle E. Hillerich, 4647 Pershing Ave., St. Louis 8.

AMERICAN BOARD OF PREVENTIVE MEDICINE: *Oral and Written. Public Health.* Philadelphia, Nov. 8-10. Sec., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore, Md.

AMERICAN BOARD OF PROCTOLOGY: *Oral and Written.* Philadelphia, Sept. 29. Final date for filing application was June 28. Sec., Dr. Stuart T. Ross, 520 Franklin Ave., Garden City, N. Y.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: *Oral.* New York, Dec. 10-11 and New Orleans, Mar. 18-19. Sec., Dr. David A. Boyd, Jr., 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF RADIOLOGY: Los Angeles, Sept. 30-Oct. 4. Final date for filing application was June 1. Sec., Dr. B. R. Kirklin, Kahler Hotel Bldg., Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Part I.* Various Centers Throughout the United States and in Certain Military Centers Abroad, Oct. 31. *Part II.* Buffalo, Sept. 24-25; Chicago, Oct. 15-16; New Haven, Nov. 19-20; Kansas City, Kan., Dec. 10-11; Los Angeles, Jan. 14-15; San Francisco, Jan. 17-18; Houston, Feb. 18-19; Nashville, Mar. 11-12; Boston, April 8-9, and New York, June 10-11.

AMERICAN BOARD OF UROLOGY: February 1957. Sec., Dr. William Niles Wishard, 1711 N. Capital Ave., Indianapolis 7.

BOARD OF THORACIC SURGERY: *Written.* Various centers throughout the country, Sept. 7. Final date for filing applications was July 1. A subsequent written examination will be held in February 1957, and the closing date for registration is Dec. 1, 1956. Sec., Dr. William M. Tuttle, 1151 Taylor Ave., Detroit 2.

DEATHS

Ruth, Henry Swartley ⊕ Penn Valley, Pa.; born in Philadelphia Aug. 12, 1899; Hahnemann Medical College and Hospital of Philadelphia, 1923; emeritus professor of anesthesiology at his alma mater, where he was clinical professor of anesthesia from 1933 to 1940 and later professor and head of the department of anesthesiology; specialist certified by the American Board of Anesthesiology, of which he was at one time vice-president and president; in 1918 served in the Student Army Training Corps; director of courses in anesthesiology for the U. S. Army and Navy during World War II; president of the American Society of Anesthesiology in 1938, vice-president the previous year, and served for many years on its board of directors; in 1952 was presented with the Distinguished Service award of the American Society of Anesthesiologists; past-president of the Philadelphia Society of Anesthesiology and the Pennsylvania Society of Anesthesiology; formerly vice-president of the American Society of Regional Anesthesia; member of the International Anesthesia Research Society and the World Medical Association; fellow of the International College of Surgeons; Secretary, Section on Miscellaneous Topics, Section on Anesthesia, American Medical Association, 1939-1940; chief, division of anesthesia at the Philadelphia General Hospital from 1933 to 1940 when he became consulting anesthetist; civilian consultant for the U. S. Naval Hospital in Philadelphia from 1948 to 1952; chief, anesthetic service, West Jersey Homeopathic Hospital in Camden, N. J., 1941-1942; for many years on the staffs of the Hahnemann and St. Luke's and Children's hospitals in Philadelphia; author of section on anesthetics, revision service volume, "Cyclopedia of Medicine," in 1914, and section on regional anesthesia, Bancroft's "Operative Surgery," in 1941; associate editor of anesthesia subjects in "Cyclopedia of Medicine, Surgery, Specialties," from 1939 to 1952; first editor of *Anesthesiology* and served in that capacity until his retirement last year, remaining as editor emeritus; on the advisory board of the *American Journal of Surgery;* died June 7, aged 56, of cerebral concussion with edema and hemorrhage, as the result of a fall.

Christie, Arthur Carlisle ⊕ Crescent City, Fla.; born in West Sunbury, Pa., Dec. 29, 1879; University of Wooster Medical Department, Cleveland, 1904; specialist certified by the American Board of Radiology; member and past-president of the Medical Society of the District of Columbia, American Roentgen Ray Society, and the American College of Radiology, receiving its Gold medal in 1953; in 1937 elected president of the Fifth International Congress of Radiology; honorary fellow of the British Faculty of Radiologists; member of the American Radium Society; fellow of the International College of Surgeons and the American College of Physicians; formerly professor of operative surgery and roentgenology at the Army Medical School, Washington, D. C., professor of radiology, George Washington University School of Medicine in Washington, D. C., and professor of clinical radiology at the Georgetown University School of Medicine in Washington, D. C.; a president of the board of trustees of the American University in Washington, D. C.; on the board of honorary consultants, Army Medical Library; received the second Dr. Frank E. Gibson Award in recognition of "meritorious contributions to medical science"; formerly member of the Committee on the Costs of Medical Care; veteran of World War I; served as consultant in radiology to the U. S. Army, the Veterans Administration, and the National Research Council; from 1924 to 1929 editor of the *American Journal of Roentgenology and Radium Therapy;* author of "Economic Problems of Medicine" and other books; died June 22, aged 76.

Wahl, Harry Roswell ⊕ Kansas City, Kan.; born in Minnesota City, Minn., in 1886; Johns Hopkins University School of Medicine, Baltimore, 1912; professor of pathology at the University of Kansas School of Medicine, where he was dean for many years; specialist certified by the American Board of Pathology; member of the American Association of Pathologists and Bacteriologists and the College of American Pathologists; consulting pathologist at Veterans Administration Hospital in Excelsior Springs, Mo., Bethany and St. Margaret's hospitals; in recognition of his services, the Kansas Board of Regents voted recently to change the name of the Medical Science Building at the Medical Center to Wahl Hall; for many years pathologist and superintendent of the University of Kansas Hospitals; died in the University of Kansas Medical Center June 18, aged 70, of carcinoma of the urinary bladder.

Barnett, Irving Francis ⊕ Chicago; born in Chicago in 1891; University of Illinois College of Medicine, Chicago, 1913; associate clinical professor of ophthalmology at Stritch School of Medicine of Loyola University; specialist certified by the American Board of Ophthalmology and the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the Association for Research in Ophthalmology; fellow of the American College of Surgeons; awarded the Victoria Cross for medical service in the British Army during World War I; for two years county jail physician; senior ophthalmologist at the Henrotin Hospital, where he died June 26, aged 64, of cerebral thrombosis.

Hynes, Frank Joseph ⊕ New York City; born in New York City Oct. 16, 1908; University and Bellevue Hospital Medical College, New York City, 1933; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology, American Laryngological, Rhinological and Otological Society, American Trudeau Society, and the American College of Allergists; fellow of the International College of Surgeons and the American College of Surgeons; served on the faculty of Cornell University Medical College; on the staffs of the Manhattan Eye, Ear and Throat Hospital and the New York Hospital; died June 7, aged 47.

Berman, William ⊕ White Plains, N. Y.; born in Rochester July 22, 1900; Cornell University Medical College, New York City, 1925; certified by the National Board of Medical Examiners; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychoanalytic Association, American Psychiatric Association, Association for Research in Nervous and Mental Diseases, and the American Psychopathological Association; on the staffs of the Grasslands Hospital in Valhalla, St. Agnes Hospital in White Plains, and the United Hospital in Port Chester; died March 12, aged 55.

Durkin, Harry Anthony ⊕ Peoria, Ill.; Harvard Medical School, Boston, 1915; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; served as a member and president of the city board of health; past-president of the Illinois Heart Association and the Peoria Heart Association; veteran of World War I; past-president of the board of the Peoria Municipal Tuberculosis Sanitarium; on the staffs of the Methodist Hospital of Central Illinois and St. Francis Hospital, where he died May 20, aged 65, of nephrosclerosis and general arteriosclerosis.

Barbour, Guy William ⊕ West Stewartstown, N. H.; Kentucky School of Medicine, Louisville, 1908; died May 10, aged 73, of heart disease.

Barbour, William Jay ⊕ Shell Rock, Iowa; State University of Iowa College of Medicine, Iowa City, 1947; formerly an officer in the U. S. Air Force Reserve; died in the Veterans Administration Hospital, Iowa City, May 8, aged 32, of toxic myocarditis.

Rowan, Henry Madison ⊕ Trenton, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1920; director of the department of obstetrics and attending obstetrician at the Mercer Hospital, where he died April 12, aged 61, of carcinoma of the esophagus with metastasis to the brain.

Rummage, Leland Charles, Nanticoke, Pa.; Medico-Chirurgical College of Philadelphia, 1913; a member of the board of education; served as vice-president and president of the First National Bank; president of the board of the Retreat State Hospital in

⊕ Indicates Member of the American Medical Association.

Hunlock Creek, where he was consultant; chairman of the board of Nanticoke State Hospital, where he died May 29, aged 69, of rupture of the arch of the aorta, atherosclerosis, and hypertension.

Ruskin, Thomas Morris, Wapakoneta, Ohio; Ohio State University College of Medicine, Columbus, 1954; interned at the Mercy Hospital in Springfield; veteran of World War II; on the staff of St. Rita's Hospital in Lima; died April 28, aged 29, of melanosarcoma.

Safley, Agnes Isabel ✠ Cedar Rapids, Iowa; State University of Iowa College of Medicine, Iowa City, 1904; on the staff of St. Luke's Methodist Hospital, where she died April 26, aged 80, of myocardial infarction.

Sangmeister, Henry John Augustus ✠ Philadelphia; Medico-Chirurgical College of Philadelphia, 1916; fellow of the American College of Surgeons; served on the faculty of his alma mater; veteran of World War I; on the staffs of St. Joseph's, St. Agnes, and St. Vincent's hospitals; for many years on the staff of the Philadelphia General Hospital; died in the Lankenau Hospital May 5, aged 66, of intestinal obstruction.

Santos, Pedro Martir ✠ Chicago; Meharry Medical College, Nashville, Tenn., 1914; specialist certified by the American Board of Obstetrics and Gynecology; fellow of the International College of Surgeons; for many years on the staff of Provident Hospital; died in Milwaukee June 25, aged 69.

Saylor, Melvin Alvin, North Wales, Pa.; Jefferson Medical College of Philadelphia, 1915; emeritus professor of physiological chemistry at Temple University School of Medicine in Philadelphia; served on the faculty of his alma mater; member of the American Chemical Society, American Association of University Professors, and the American Association for the Advancement of Science; died in the North Penn Hospital, Lansdale, April 11, aged 81, of heart disease.

Scanlan, Peter Lawrence, Prairie du Chien, Wis.; Rush Medical College, Chicago, 1891; died Feb. 29, aged 93, of generalized arteriosclerosis, diabetes mellitus, and carcinoma of the prostate.

Schell, Warren W., Jacksonville, Fla.; Meharry Medical College, Nashville, Tenn., 1905; on the staff of the Brewster Hospital; died April 23, aged 76, of myocardial degeneration.

Schlesinger, Jacob ✠ Hammond, Ind.; Chicago College of Medicine and Surgery, 1914; member of the American Academy of General Practice; at one time secretary of the Lake County Medical Society; veteran of World War I; vice-president of the active staff of St. Margaret Hospital, where he died March 14, aged 64, of acute coronary occlusion.

Schmitt, Gustav, Milwaukee; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1899; died in St. Mary's Hospital April 7, aged 83, of cardiac infarction.

Schram, David Leo ✠ Chicago; Northwestern University Medical School, Chicago, 1900; on the staff of Michael Reese Hospital, where he died April 29, aged 79, of acute myocardial infarction.

Schub, Rosa Brind, Trenton, N. J.; Woman's Medical College of Pennsylvania, Philadelphia, 1931; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association; on the staff of the New Jersey State Hospital, where she died April 10, aged 57, of coronary occlusion.

Schwartz, Alfred John Charles ✠ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; member of the Missouri State Medical Association; veteran of World War I; died in the American Hospital June 3, aged 76, of carcinoma of the stomach.

Scott, Dwight Ferdina, Sault Sainte Marie, Mich.; Northwestern University Medical School, Chicago, 1934; on the staff of the Chippewa County War Memorial Hospital, where he died May 2, aged 48, of massive gastric hemorrhage.

Scott, Francis Joseph ✠ Waterford, N. Y.; Albany (N. Y.) Medical College, 1905; formerly health officer; served on the staffs of the Cohoes (N. Y.) Memorial Hospital and the Leonard Hospital in Troy, where he died April 12, aged 73, of cerebral hemorrhage.

Scott, Henry, New York City; University of the City of New York Medical Department, New York City, 1895; on the staffs of the Harlem and St. Luke's hospitals, and New York Hospital–Cornell Medical Center; died in Nashville, Tenn., May 8, aged 84, of arteriosclerotic heart disease.

Senseny, Herbert Milford ✠ Fort Wayne, Ind.; Johns Hopkins University School of Medicine, Baltimore, 1910; veteran of World War I; past-president of the Allen County Medical Society; served as president of the medical staff at St. Joseph Hospital, where he died March 12, aged 71, of coronary occlusion.

Seward, Frederic Henry, Madison, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1901; an associate member of the American Medical Association; on the staffs of the All Souls and Morristown Memorial hospitals in Morristown; died in Maplewood May 10, aged 78.

Sessoms, M. Perry, Savannah, Ga.; Leonard Medical School, Raleigh, N. C., 1906; died May 16, aged 75, of coronary occlusion and arteriosclerosis.

Shaweker, Max ✠ Canton, Ohio; Northwestern University Medical School, Chicago, 1914; specialist certified by the American Board of Pathology; member of the College of American Pathologists and the American Society of Clinical Pathologists; veteran of World Wars I and II; served on the board of education in Dover; chief pathologist at the Mercy Hospital; formerly on the staff of the Union Hospital in Dover; died April 18, aged 67.

Sheid, Zachariah T., Norfolk, Ark. (licensed in Arkansas in 1903); died in Mountain Home, April 26, aged 82.

Short, William Henry ✠ Captain, U. S. Navy, retired, La Jolla, Calif.; Georgetown University School of Medicine, Washington, D. C., 1904; entered the U. S. Navy May 20, 1907; retired June 30, 1936; died in the U. S. Naval Hospital, San Diego, May 15, aged 75, of a heart attack.

Siddall, William Glenn, Alliance, Ohio; Western University Faculty of Medicine, London, Ontario, Canada, 1915; fellow of the American College of Surgeons; on the staff of the Alliance City Hospital; died April 13, aged 65.

Sims, William Scott ✠ Hamtramck, Mich.; Meharry Medical College, Nashville, Tenn., 1932; interned at the Provident Hospital and Free Dispensary in Baltimore; veteran of World War II; on the staffs of the Kirwood General and Trinity hospitals in Detroit; died June 11, aged 50, of coronary occlusion.

Sisler, Franklin Herbert ✠ Bristow, Okla.; College of Physicians and Surgeons, Baltimore, 1910; on the staff of the Bristow Memorial Hospital, where he died April 7, aged 68, of cerebrovascular accident.

Small, Harold Ernest ✠ Fullerton, Calif.; University of Vermont College of Medicine, Burlington, 1915; fellow of the American College of Surgeons; for many years practiced in Augusta, Maine, where he was on the staff of the Augusta General Hospital; served on the staff of the Cary Memorial Hospital in Caribou, Maine; on the staff of St. Joseph Hospital in Orange, where he died May 17, aged 69, of coronary occlusion and posterior myocardial infarct.

Smith, Charles Russell, Harrisburg, Ohio; Starling Medical College, Columbus, 1894; for many years president of the Pleasant Township School Board; served on the staff of the Mount Carmel Hospital in Columbus; died April 6, aged 84, of injuries received in an automobile accident.

Smith, Joseph G. ✠ Bartlesville, Okla.; Medico-Chirurgical College of Kansas City, Mo., 1903; died in the Jane G. Phillips Memorial Hospital May 7, aged 85.

Smith, Leighton Alexander ✠ Quitman, Ga.; University of Louisville (Ky.) Medical Department, 1915; died in the John D. Archbold Memorial Hospital in Thomasville May 7, aged 64, of myocardial infarction.

Smith, Rockwell Emerson ✠ Henderson, Ky.; University of Virginia Department of Medicine, Charlottesville, 1910; died in the Methodist Hospital April 30, aged 72, of cerebral thrombosis.

Smith, William Morgan, Boston; Tufts College Medical School, Boston, 1904; died in Woburn April 8, aged 75.

Standefer, Rufus Edd, Dunlap, Tenn.; Emory University School of Medicine, Emory University, Ga., 1915; died in the Sequatchie Memorial Hospital May 23, aged 72, of acute myocardial infarction, coronary occlusion, and generalized arteriosclerosis.

Staufft, Hannah Ophelia, Elkhart, Ind.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1902; died in Goshen Feb. 20, aged 87, of cerebral hemorrhage.

Steele, William Arthur ⊕ Havana, Ill.; Barnes Medical College, St. Louis, 1896; a member of the advisory board of welfare commission of Mason County; died April 13, aged 88, of bronchogenic carcinoma.

Steinberg, James ⊕ Los Angeles; Cornell University Medical College, New York City, 1911; specialist certified by the American Board of Urology; member of the American Urological Association; fellow of the American College of Surgeons; for many years associated with the Cedars of Lebanon Hospital; on the staff of the Mount Sinai Hospital and Clinic; died April 23, aged 66, of coronary thrombosis.

Steinharter, Stephan, Hempstead, N. Y.; Ludwig-Maximilians-Universität Medizinische Fakultät, München, Bavaria, Germany, 1906; an associate member of the American Medical Association; in 1953 retired as clinical assistant in the medical division of Mount Sinai Hospital in New York City; died May 9, aged 75, of hypostatic pneumonia, hemiplegia, and arteriosclerosis.

Stelling, Richard Nunnally, Greensboro, N. C.; Medical College of Georgia, Augusta, 1930; member of the Medical Society of the State of North Carolina; veteran of World War II; died in the Moses H. Cone Memorial Hospital April 11, aged 53, of third degree burns.

Stephenson, Gordon Arnold ⊕ Summit, N. J.; University of Buffalo School of Medicine, 1929; certified by the National Board of Medical Examiners; fellow of the American College of Surgeons; for many years on the staff of the Overlook Hospital, where he died May 4, aged 53.

Stewart, James Golden, Sheridan, Wyo.; Northwestern University Medical School, Chicago, 1907; member of the Wyoming State Medical Society; died April 30, aged 74, of coronary thrombosis.

Stewart, Omer Hall ⊕ Aurora, Ind.; Hospital College of Medicine, Louisville, Ky., 1907; served overseas during World War I; died in the Christ Hospital, Cincinnati, March 24, aged 74, of uremia following an operation for acute cholecystitis.

Stotts, Roscoe Glenn, Kenova, W. Va.; Starling Medical College, Columbus, 1906; an associate member of the American Medical Association; served as health officer; died May 22, aged 74.

Stringer, J. H., Memphis, Tenn.; Meharry Medical College, Nashville, Tenn., 1897; died May 4, aged 84.

Strout, Arthur Chester, Dexter, Maine; College of Physicians and Surgeons, Boston, 1904; member of the Maine Medical Association; served as vice-president of the Penobscot County Medical Society; on the staff of the Plummer Memorial Hospital; died April 14, aged 75.

Strunk, Aloysius C., Chicago; Jenner Medical College, Chicago, 1916; on the staff of the Woodlawn Hospital; retired member of medical staff, Swift & Company; died June 25, aged 70.

Sullivan, Gerald Augustine ⊕ Dwight, Ill.; Marquette University School of Medicine, Milwaukee, 1917; veteran of World War I; medical director of the Kelley Institute; died in the Veterans Administration Hospital May 6, aged 63, of carcinoma.

Sullivan, John Joseph, Jr. ⊕ Morristown, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1899; past-president of the Lackawanna County Medical Society; specialist certified by the American Board of Otolaryngology; fellow of the American College of Surgeons; veteran of World War I; on the staff of the All Souls Hospital in Morristown; served on the staffs of St. Mary's, Scranton State, and Mercy hospitals in Scranton, Pa.; died in the Morristown Memorial Hospital April 12, aged 78, of ruptured aneurysm of the aorta.

Taylor, Mary Caroline, San Francisco; Cooper Medical College, San Francisco, 1905; an associate member of the American Medical Association; died Feb. 20, aged 89, of multiple fractured ribs and generalized arteriosclerosis.

Test, Frederick Cleveland ⊕ Glen Ellyn, Ill.; Georgetown University School of Medicine, Washington, D. C., 1895; associate professor of orthopedic surgery emeritus at Northwestern University Medical School, Chicago; member of the Clinical Orthopaedic Society and the American Academy of Orthopaedic Surgeons; veteran of World War I; served on the staff of the Cook County Hospital in Chicago; died in Wheaton July 8, aged 87.

Tincher, Edward Harper, Columbia, Mo.; Homeopathic Medical College of Missouri, St. Louis, 1895; died in the Boone County General Hospital March 28, aged 87, of carcinoma of the pancreas.

Touhill, Neal Joseph ⊕ Dexter, Mo.; St. Louis University School of Medicine, 1929; died April 21, aged 52.

Tracht, Robert Russell ⊕ St. Paul; Loyola University School of Medicine, Chicago, 1932; specialist certified by the American Board of Ophthalmology; on the faculty of the University of Minnesota Medical School, Minneapolis, and the University of Minnesota Graduate School, Minneapolis-Rochester; member of the American Academy of Ophthalmology and Otolaryngology, American Ophthalmological Society, and the Association for Research in Ophthalmology; on the staff of the Charles T. Miller Hospital; died May 25, aged 56, of heart disease.

Treat, David L. ⊕ Flint, Mich.; Starling Medical College, Columbus, 1898; fellow of the American College of Surgeons; at one time postmaster of Flint; served three terms as mayor; for many years president of the National Bank of Commerce; formerly chief surgeon of Buick Motor Division; in 1938 vice-president of the Michigan Association of Postmasters; died April 23, aged 82, of coronary thrombosis.

Umburn, Le Roy ⊕ Albion, Pa.; University of Pittsburgh School of Medicine, 1910; served overseas during World War I; vice-president of the First National Bank; school physician for 30 years; died in the Hamot Hospital, Erie, May 28, aged 71, of dissecting aneurysm of the aorta and arteriosclerosis.

Vande Roovaart, John Frank ⊕ Chicago; Northwestern University Medical School, Chicago, 1896; served on the staff of the Roseland Community Hospital; died June 21, aged 84.

Van Kirk, George Hiram ⊕ Kentland, Ind.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; veteran of World Wars I and II; died in St. Elizabeth Hospital, Lafayette, Feb. 14, aged 76, of acute coronary occlusion.

Van Meter, Julius Niel, Monrovia, Calif.; Drake University Medical Department, Des Moines, Iowa, 1913; an associate member of the American Medical Association; served as grade school trustee; died May 25, aged 69, of coronary thrombosis.

Vanni, Frank Lewis ⊕ Baltimore; New York Medical College, Flower and Fifth Avenue Hospitals, New York City, 1943; certified by the National Board of Medical Examiners; fellow of the International College of Surgeons; served during World War II; on the staffs of the Bon Secours, Maryland General, and St. Joseph's hospitals; died in the Johns Hopkins Hospital May 19, aged 39, of malignant hypertension.

Vasenius, Frederick Walter, Chisholm, Minn.; George Washington University School of Medicine, Washington, D. C., 1909; health officer; served as a medical missionary in Africa for the Seventh Day Adventist Church; died in the Chisholm Memorial Hospital April 23, aged 82.

Vornholt, Otto A. ⊕ Gallipolis, Ohio; the Hahnemann Medical College and Hospital, Chicago, 1919; fellow of the American College of Surgeons; on the staff of the Holzer Hospital, where he died June 13, aged 65, of lymphoma.

Walker, Louis Kyle ⊕ Ahoskie, N. C.; University of Maryland School of Medicine, Baltimore, 1911; chief of staff of Roanoke-Chowan Hospital, where he died May 17, aged 67, of pneumonia and cerebral hemorrhage.

Waller, Percy Gardiner ✠ New Baltimore, N. Y.; Albany (N. Y.) Medical College, 1893; chosen the state's outstanding general practitioner for 1951 by the council of the Medical Society of the State of New York; served as president of the Greene County Medical Society; for many years health officer; member of the staff of the Memorial Hospital of Greene County in Catskill; died April 27, aged 85, of cerebral arteriosclerosis and chronic nephritis.

Ward, Gertrude Potter, Bloomfield, N. J.; Cornell University Medical College, New York City, 1900; an associate member of the American Medical Association; at one time health officer of Bloomfield and Glen Ridge; served as president of the Bloomfield Savings Bank; died May 20, aged 80, of cancer.

Warren, James Walter, New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1904; member of the Louisiana State Medical Society; died in the Touro Infirmary April 15, aged 80.

Warren, William Ernest ✠ Fort Payne, Ala.; Medical College of Alabama, Mobile, 1905; veteran of World War I; served on the staff of the Tennessee Coal, Iron and Railroad Company, Birmingham, and the Emergency Hospital in Ensley; died May 9, aged 77, of a brain injury received in an automobile accident.

Watson, Fred Cecil, Petersburg, Va.; Vanderbilt University School of Medicine, Nashville, Tenn., 1906; fellow of the American College of Surgeons; veteran of World Wars I and II; died April 19, aged 71.

Weedn, Alton James ✠ Duncan, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1935; past-president of the Stephens County Medical Society; chief of staff, Weedn Hospital, where he died April 27, aged 48, of ventricular fibrillation and nephrosis.

Weir, Edward Claude ✠ Council Bluffs, Iowa; State University of Iowa College of Medicine, Iowa City, 1900; member of the staff of the Jennie Edmundson Memorial Hospital; died May 29, aged 79, of coronary occlusion, arteriosclerosis, and congestive heart disease.

Weisel, William Francis, Quakertown, Pa.; Medico-Chirurgical College of Philadelphia, 1912; an associate member of the American Medical Association; past-president of the Bucks County Medical Society; for three terms local school director, serving as past-president and treasurer of the board; one of the founders of the Quakertown Community Hospital, where he was for many years medical chief of staff, and a past-president of the hospital board; died May 23, aged 73, of adenocarcinoma of the pancreas.

Weiss, Adolf Abraham ✠ New York City; Columbia University College of Physicians and Surgeons, New York City, 1914; member of the American College of Gastroenterology; on the staff of the Mount Sinai Hospital, where he died April 23, aged 65, of myocardial insufficiency.

Wells, John Bridger, Little Rock, Ark.; University of Arkansas School of Medicine, Little Rock, 1916; veteran of World War I; died May 3, aged 76.

Wenzel, Henry George, Westfield, N. J.; Long Island College Hospital, Brooklyn, N. Y., 1898; died in St. Petersburg, Fla., April 11, aged 91.

Westheimer, James Russell, Americus, Ga.; University of Toronto Faculty of Medicine, Toronto, Canada, 1927; died April 15, aged 60.

Whetstone, William Berry, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1903; an associate member of the American Medical Association; on the staff of the Presbyterian Hospital; died May 14, aged 77, of cancer.

White, George Martin ✠ Rockmart, Ga.; Atlanta College of Physicians and Surgeons, 1906; served as president of the Polk County Medical Society; first chief of staff at Rockmart-Aragon Hospital; director of the Rockmart Bank; died in the Rockmart-Aragon Hospital April 11, aged 76, of aspirational pneumonia and cerebral thrombosis.

Wiborn, J. Auburn, Santa Barbara, Calif.; Dartmouth Medical School, Hanover, N. H., 1897; at one time on the staff of the French Hospital in San Francisco; died in the Santa Barbara Cottage Hospital April 17, aged 84, of arteriosclerotic and hypertensive heart disease.

Wildman, Otis ✠ Captain, U.S.N., retired, Washington, D. C.; Indiana University School of Medicine, Indianapolis, 1917; specialist certified by the American Board of Pathology; fellow of the American College of Physicians; entered the U. S. Navy Sept. 7, 1917; retired Nov. 1, 1943; veteran of World Wars I and II; died in the U. S. Naval Hospital, Bethesda, Md., May 14, aged 65, of myocardial infarction.

Williams, John Charles, New York City; University of Vermont College of Medicine, Burlington, 1912; for many years on the staff of St. Luke's Hospital; died April 25, aged 67.

Williams, John Hugh, Muncie, Ind.; Starling Medical College, Columbus, 1907; member of the Indiana State Medical Association; served as county coroner and city health officer; died May 12, aged 76, of carcinoma of the rectum.

Wilson, Doxey Robert ✠ San Jose, Calif.; Cooper Medical College, San Francisco, 1908; fellow of the American College of Surgeons; formerly superintendent of the Santa Clara County Hospital; veteran of World War I; died in the O'Connor Hospital May 1, aged 72, of injuries incurred in a fall.

Wilson, George Kissick ✠ Streator, Ill.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1907; on the honorary staff of St. Mary's Hospital, where he died May 3, aged 76, of cerebral hemorrhage.

Wise, Louis John, Cleveland; Starling Medical College, Columbus, 1901; died May 31, aged 77.

Wood, Granville Numan ✠ Palo Alto, Calif.; Stanford University School of Medicine, San Francisco, 1924; also a lawyer; for many years city councilman; died in the Palo Alto Hospital May 2, aged 67, of heart disease.

Wood, William Charles, Pleasantville, N. J.; Jefferson Medical College of Philadelphia, 1908; specialist certified by the American Board of Otolaryngology; member of the Medical Society of the State of Pennsylvania; served on the faculty of the University of Pennsylvania Graduate School of Medicine, Philadelphia; formerly on the staffs of the Children's Hospital, Mary J. Drexel Home, and the Lankenau Hospital, Philadelphia; died in the Graduate Hospital of the University of Pennsylvania, Philadelphia, June 4, aged 70, of ruptured aortic aneurysm.

Worten, Divonis ✠ Pawhuska, Okla.; University of Nashville (Tenn.) Medical Department, 1902; donor of the Worten Athletic Field at the Oklahoma Baptist University at Shawnee; died May 24, aged 85.

Wright, Edward Mack, Warsaw, Ohio; Eclectic Medical Institute, Cincinnati, 1896; past-president of the Coshocton County Medical Society; served as county coroner, on the city board of health of Coshocton, and on the board of education of Coshocton and Warsaw; died in the Rochester (Minn.) Methodist Hospital April 25, aged 83, of bronchopneumonia.

Wright, Walter Nelson ✠ Rose Hill, Iowa; State University of Iowa College of Medicine, Iowa City, 1897; for many years mayor; served as president of the school board; died in Oskaloosa May 8, aged 89.

Youngblood, Fred ✠ Huntsville, Ark.; Beaumont Hospital Medical College, St. Louis, 1897; died Feb. 24, aged 79, of coronary thrombosis.

Zacks, Morris Joseph ✠ Conneautville, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1933; past-president of the Crawford County Medical Society; served on the Conneaut Valley school board; on the staff of the Meadville (Pa.) City Hospital; died in Everett April 5, aged 49, of coronary occlusion.

CORRECTION

Herman, Harold.—In THE JOURNAL (Aug. 4, 1956, page 1405) an obituary of Dr. Harold Herman, who is currently in practice at 229 E. 79th St., New York City, was erroneously published. Dr. Harold C. Herrman of 639 W. 173rd St., New York City, died April 13, 1956.

FOREIGN LETTERS

AUSTRIA

Endocranial Complications in Otorhinolaryngology.—At the meeting of the Society of Physicians of Vienna on June 22, Dr. E. Bauer reported a series of seven patients with endocranial complications, including three with meningitis, three with sinus thrombosis, and one with extradural abscess, all of which conditions developed without their characteristic symptoms. The fact that the endocranial complications of the inflammatory diseases in the field of otorhinolaryngology are becoming increasingly less typical is attributed to modern chemotherapy. In addition to the local symptoms caused by the primary disorder (otitis and sinusitis, acute and chronic), the various complications exhibit only such vague symptoms as headache, fatigue, lack of drive, and exhaustion, often simulating influenza. Because of this lack of characteristic symptoms, the disease may persist and progress in a latent form. This favors the development of complications. Examination of the spinal fluid is particularly important in these patients, because this simple test can be carried out at any time and permits the recognition of an incipient endocranial complication. Otologists should not dispense with modern chemotherapy but should use it only for exact indications and with attention to time of onset and dosage. They should also remember that, despite the use of sulfonamides and antibiotics, endocranial complications that require surgical treatment may develop.

Oxygen Therapy in Failure of the Peripheral Circulation.—At the same meeting Dr. W. Möller of Kassel, Germany, said that oxygen therapy has advanced beyond the experimental stage and has become an integral part of the conservative treatment of failure of the peripheral circulation in many clinics. A comparison of the sphygmograms of the pulse in the extremities after the insufflation of oxygen reveals that the painful reactions caused by the embolic occlusion and blockage of the vessels, as evidenced in formation of gangrene, are effectively counteracted by the oxygen therapy. Oxygen-foam therapy represents a further advance in oxygen therapy. In order to adjust the size of the foam vesicle to the smallest blood vessels, the oxygen is incorporated into fluids compatible with blood. These vesicles pass through even the minutest capillaries so that they do not involve the danger of embolization. It is impossible to effect complete recovery by means of oxygen therapy, but the function can be restored and the patient freed from symptoms. Clinical and arteriographic findings show that a collateral circulation capable of meeting the functional demands requires from three to six months for its complete development. The treatment proved successful in 70% of the outpatients and in 80% of the hospital patients. The best therapeutic results can be expected when treatment is begun during the early or "silent" phase, or during the atypical ischemic stage. No treatment can be regarded as effective in all patients. The insufflation of oxygen must be complemented by oxygen therapy in the form of cer-aerosols (Lanthasol), cellular therapy (particularly by placental therapy), short-wave diathermy, breathing exercises, and diet. These various methods must in turn be complemented by giving oxygen.

BELGIUM

Infectious Embryopathies.—At the Society of Gynecology and Obstetrics, François and Verriest said that rubella or embryopathy is chiefly characterized by congenital malformations, localized (1) in the eye (central or total cataract, microphthalmia, and dystrophy of the retina); (2) in the inner ear (complete or partial deafness and disturbances in the labyrinth); and (3) in the heart (patent ductus arteriosus and interauricular septal defect). Other deformities are rare. The earlier the maternal infection, the more likely is the lens to be affected. If the mother has rubella in the first trimester of her pregnancy, the fetus may be aborted, stillborn, or born with an embryopathy. The percentage of children affected varies from 10 to 50 according to the virulence of the infecting agent. Deformities are probably due to the direct action of the virus or its toxins on the developing organs. Treatment must be preventive and consists of immunization of the mother with convalescent serum during the incubation period of the disease. Mumps, chicken pox, poliomyelitis, and infectious hepatitis cause embryopathy but rarely.

Children of Tuberculous Parents.—Graffar and Asiel in *Acta tuberculosea belgica* reported on the children of tuberculous parents in Brussels who had been divided into those who had and those who had not been vaccinated with BCG. In an attempt to protect the latter group, the tuberculous parent is hospitalized or the child is isolated in a preventorium. The reluctance of many parents to be separated from their children for a long time has interfered with this attempt and has led to a high incidence of tuberculosis among these children. The incidence of tuberculosis was four to seven times greater in the unvaccinated group.

Androgenic Smears.—Pundel of Luxembourg reported to the Society of Gynecology and Obstetrics that testosterone given in sufficient doses to a castrated woman or one in the menopause causes hyperplasia of the external basal and intermediate layers of the vaginal epithelium and the smears show basal external and intermediate cells characterized by nuclear and cytoplasmic hypochromatism. The same findings that the author designates as pure androgenic reactions may appear spontaneously in a woman at the menopause and in young women in a certain state of adrenocortical hyperactivity, but, in addition to these purely androgenic smears, there are others that show mixed estrogen-androgenic, progesterone-androgenic, and other even more complicated findings.

Herniation of the Nucleus Pulposus.—At the University of Louvain, Van der Bergh studied a series of 80 patients who had undergone surgical treatment for herniation of the nucleus pulposus. In 50 the sciatic pain was relieved, and in the rest there was complete cure; 48 patients were able to return to work. Hernias between the fifth lumbar and first sacral vertebrae were the easiest to heal. The best results are obtained with large hernias. Only 50% of persons doing physical work recovered completely as compared with 80% for those doing mental work.

Lead Poisoning.—At a meeting of the Society of Radiology, Chairdon stated that, at the time of the periodic hematological examinations of the members of the x-ray service of the Military Hospital of Brussels, serious lead poisoning was observed in more than half the personnel. This manifested itself by an increase in basophilic granulations in the erythrocytes. Similar poisoning was observed at another military hospital. It is principally due to the handling by the workers of cassettes contaminated by lead dust, which comes from the passage of the cassettes through the lead-lined cassette holders and from the handling of lead-identifying figures and cases. Among the preventive measures suggested was painting the lead figures, plates, and other lead accessories used in x-ray services with a durable varnish.

Medical Inspection in Schools.—Medical inspection of school children is required by law, but its application is inadequate, especially at the high school levels. It also neglects the hygienic supervision of the teaching staff and other school employes. Professor Goossens proposed to the Belgian Association of Hygiene and Social Medicine amendments in the present legislation and advocated the creation of a central bureau to advise the local services and coordinate the school medical inspection services. The school medical inspection should be supervised by a physician trained in school hygiene, physical education, otolaryngology, ophthalmology, orthopedics, psychiatry, and the reading of roentgenograms of the chest.

The items in these letters are contributed by regular correspondents in the various foreign countries.

BRAZIL

Blood Groups.—Although the blood groups do not in themselves constitute a sure means of anthropological classification, they may be used as a valuable aid to such a classification. A study of the O, A, B, and AB blood groups in 482 adults and a study of the M and N groups in 100 adults in Goa (Portuguese India) was carried out by Dr. A. X. da Silva. A great predominance of the O group in both Christians and Hindus was observed. The serologic difference between Hindus and Moors was striking. In the Moors a predominance of the A group was noted. This predominance has also been noted in Europeans, but, while the order of predominance is A, B, and O in the Moors, it is A, O, and B in the Europeans. The higher incidence of the B group in the Moors as compared with the Europeans is perhaps due to the Dravidian influence in the peoples of southern India with whom they had been crossed. There is a great predominance of the M factor over the N factor in the population of Goa. A high incidence of the M factor is observed in those belonging to the O group. The N factor was not found in those of the A group.

CANADA

Carbutamide.—In a symposium on carbutamide in the June 15 issue of the *Canadian Medical Association Journal*, Sirek and Sirek report that this drug lowered the blood sugar level in 67% of a series of depancreatized and depancreatized and hypophysectomized (Houssay) dogs. It appeared to potentiate insulin, 1 unit every 8 to 10 days being sufficient to control the blood sugar level in a dog previously requiring 24 units daily. The presence of insulin appeared to be necessary for the action of carbutamide, since when no insulin was given the blood sugar level tended to rise. Campbell noted that the effect of carbutomide on the depancreatized dog given insulin was greater than on the dog with diabetes induced by hypophysectomy. The drug lowered sugar excretion, the fasting blood sugar level, and the insulin requirement. Its influence on metabolism was limited. On withdrawal of insulin, it did not prevent glycosuria in the hypophysectomized diabetic or severe upsets in the depancreatized animal.

Clarke and co-workers performed in vitro studies. Carbutamide inhibited glucose production by liver slices incubated in a phosphate-saline medium. Hence carbutamide may exert a hypoglycemic action by reducing the glucose output of the liver. Adding insulin or glucagon nullified the effect of the drug. The drug also increased the oxygen consumption of liver slices in a pyruvic acid substrate, inhibited cytochrome oxidase, and reduced glucose uptake by isolated rat diaphragm. Wrenshall and Best attempted to answer the question whether the effectiveness of orally given sulfonylureas in restoring blood and urinary sugar levels to normal in diabetics depends on the presence of a supply of endogenous insulin. They showed that there are basic similarities in pattern between the presence or absence of appreciable amounts of extractable insulin at autopsy and the effectiveness or ineffectiveness of carbutamide in restoring the blood sugar level to normal in human diabetics. This accounts for the effectiveness of the drug in adults whose diabetes is of short duration. Whether the extractable insulin is a measure of the ability of the pancreas to produce insulin or not remains to be seen.

Hawkins and co-workers showed that carbutamide in rats depressed the glucose-6-phosphatase activity of the liver. Freidlich and co-workers injected the drug intravenously into rats three hours before giving glucose by mouth and found that it reduced the rate of glucose absorption from the intestine, as shown by the greater residue of reducing substances in the gastrointestinal tract of rats treated with carbutamide. Ashworth and Haist showed that administration of carbutamide to rats for three to five weeks leads to a significant increase in islet tissue, suggesting that the islets are stimulated by the drug.

Ogryzlo and Harrison described the effect of carbutamide on a patient who had undergone pancreatectomy several years previously. The drug lowered the blood sugar level to some extent but could not replace insulin and was erratic in its effect. It is admitted that some pancreatic tissue might have persisted. Leibel studied five patients whose diabetes came on after they reached maturity but who did not require insulin. Only three of them gave a good response to carbutamide. The effect of the drug tended to appear after a delay of up to two weeks, a fact already noted in Germany. Watt reported the failure of carbutamide to control labile diabetes in two patients. Charles noted that of four elderly diabetics only one achieved fairly good control with carbutamide therapy alone. Metzler had two patients (one elderly and one middle-aged) with mild diabetes who were satisfied with carbutamide; in the third patient, a younger person, treatment was a failure. Chase noted a good hypoglycemic effect in only one of her two patients; a troublesome rash developed in the other. Hall and co-workers obtained adequate control in three of five adults, but saw no results in a thin diabetic receiving 2 gm. of carbutamide by mouth daily. Spaulding produced hypoglycemia in nondiabetic subjects within three or four days and also noted a response in three persons with mild diabetes. Chute and Bain recorded the appearance of blotchy erythema and pruritus without hypoglycemia in three recently discovered juvenile diabetics; in two other cases of longer standing, only one patient achieved a slight hypoglycemic effect.

Smith and Kumar tried to devise a test for response to carbutamide by constructing insulin-tolerance curves before and after administration of the drug. Among the first 15 patients studied, they found 4 types: those with (1) a fall in the curve; (2) little change in the curve but a fall in the fasting blood sugar level; (3) a combination of 1 and 2; and (4) no change. Type 2 would benefit from carbutamide but not type 1, since type 2 must have an endogenous supply of insulin. The response in type 3 was unpredictable. The general opinion after these studies is that about 10% of all diabetics will benefit from carbutamide. It is useless for children and patients with acidosis and is most likely to help the obese pyknic adult with a mild diabetes of short duration. The full impact of the drug takes several days to develop and may continue for several days after its withdrawal. Some experiments with animals suggest that caution is necessary in patients already taking sedatives (the sleeping time after administration of a barbiturate was potentiated by carbutamide), tranquilizers, and possibly even alcohol.

C. M. A. Annual Meeting.—For its 89th annual meeting in June, the Canadian Medical Association went back to Quebec, where it was founded in 1867 and which it had not visited for 30 years. In addition to guests from the United States such as Dr. P. R. McDonald of Philadelphia and Dr. Lawrence Fallis of Detroit, there were speakers from the United Kingdom: Sir Howard Florey, who talked about micrococcic (staphylococcic) infection, and Professor McCance, the Cambridge nutritionist, who discussed unconsidered mechanisms in the maintenance of stability of the internal environment. The outgoing president, Dr. Clarence Routley, installed his successor, Dr. Renaud Lemieux, head of the department of medicine at Laval University, Quebec, in the presidency. Dr. Lemieux, who has been a member of the executive committee for some time, is the first French-Canadian to become president for several years.

Traffic Accidents.—The growing toll of automobile accidents has led to the sponsorship by the Canadian Medical Association of a Canadian Medical Traffic Accident Research Foundation with the aid of the Association des Médicins de Langue Française du Canada, the Royal College of Physicians and Surgeons of Canada, and the Canadian Bar Association. The purpose of the proposed foundation, for which there is a likelihood of substantial funds from industry, is collection of data and their analysis to assist in lowering morbidity and mortality due to traffic accidents. It is believed that the epidemiological approach may fruitfully be applied to these problems. To stimulate further interest by physicians in the problems of traffic accidents, a symposium was held at the annual meeting. The statistics for Canada show that accidents cause about 3,000 deaths in Canada annually and the loss of 50 million dollars through direct property damage. The number of accidents and the number of deaths are steadily increasing, and the automobile is now the chief cause of death in the 5-23 year age group. Of concern to physicians are medical and physical standards for drivers, research into psychiatric factors involved in accidents, development of a simple test for alcoholic intoxication, the organization of good first-aid treatment, efficient transportation for casualties, and adequate hospital care for the injured. Collection of statistics and analysis of data are necessary, if only as a basis for making proposals to

nonmedical organizations, including the automobile industry. The role of alcohol was variously assessed by speakers; one thought that in his province it had a direct relation to 90% of accidents, while another held that in his area it was concerned only in 4%. This is an area in which more objective figures are needed.

College of General Practice.—The College of General Practice of Canada held its second annual meeting in Quebec in conjunction with the meeting of the Canadian Medical Association. This was purely a business meeting, but the college plans to inaugurate a scientific meeting next winter. The college committee that has been studying intern training for general practice has turned in a detailed report, in which a second year of intern training, specifically called a residency in general practice, is recommended. The college believes that this second year should be different from that leading to specialization and should include three months of general medicine, including dermatology, three months of obstetrics and gynecology, three months of general emergency surgery, one month of anesthesiology, and two months of pediatrics. After completion of this program, the college recommends two to four weeks of preceptorship with a senior practicing physician.

FRANCE

Complications After Smallpox Vaccination.—In the *Semaine des hôpitaux de Paris* (June 6, 1956, page 1962) Lamache and co-workers presented a series of 30 complications following smallpox vaccinations, which they divide into four groups: (1) local accidents, (2) allergic manifestations (chiefly asthma and eczema), (3) a sudden senescence with a rapid decline of physical and intellectual activity, and (4) aggravation of disease (cancer of the breast, tuberculosis, cirrhosis of the liver, nephritis, rheumatism, and organic and functional neurological disorders). In a 70-year-old woman cerebral arteriosclerosis and hemiplegia of the left side caused by encephalomalacia followed vaccination. A hyperacute nephritis developed, and she died. The authors concluded that, in patients with epitheliomas, acute hemopathies, tuberculosis, or severe cerebral arteriosclerosis, smallpox vaccination is absolutely contraindicated. The average interval between the vaccination and the complication was 15 days.

Psoriasis.—At the May 11 meeting of the Medical Society of Paris Hospitals, Billiottet reported a series of 10 patients with psoriasis treated with nicotinic acid derivatives. Good results were observed in five, and, although the duration of the disease did not appear to affect the results, the best results were obtained in those who had the most florid eruption.

INDIA

Leukoderma.—Fernandes and Mehta in the *Journal of the Indian Medical Profession* for June state that, although at one time leukoderma was of interest only to the dermatologist, today it is being studied by the internist, endocrinologist, radiologist, and surgeon. After any intestinal disorder is excluded, the disease is treated locally with natural or artificial ultraviolet light. Treatment with methoxsalen and gold has also been tried. Some patients however, especially those whose condition is chronic, fail to respond to any of the treatments mentioned, and these may be treated surgically. Formerly the patches were first abraded with a special sandpaper and then treated with a solution of gold chloride and tannic acid. The results were not satisfactory, as the degree of pigmentation could not be controlled. Later, therefore, intradermal pigmentation after the method of Conway was performed under anesthesia. The pigments used must be insoluble and free from harmful local or systemic effects. The border of hyperpigmentation that is almost always present surrounding an area of leukoderma is removed with electric drills. Surgical treatment alone cannot prevent the development of new patches, and, in the spreading type of the disease, the cause should be found and removed if possible.

In the *Bulletin of the Calcutta School of Tropical Medicine* for April, 1956, Chakrabarti and Banerjee reported the results of treatment in 75 patients who had leukoderma with a methoxsalen paint. The lesions varied from a few small patches to numerous and extensive areas, and the duration of the disease ranged from a few weeks to several years. The period of treatment varied from three months to two years. The treatment consisted of local application of the paint combined with ultraviolet ray therapy. The oral administration of methoxsalen was found to be of little value. Only 2 patients with small patches of recent origin were completely cured, while 34 showed no improvement and 39 were improved in varying degrees. Response was better in cases of recent origin. Lesions on the trunk and face responded better than those on the extremities. Lesions on mucous membranes, palms, and soles showed hardly any change. Some of the side-effects observed were local erythema, dermatitis, change in consistency of the skin, which became hard and scaly, and hyperpigmentation. Sometimes hyperpigmentated patches with fine exfoliation developed in regions distant from the site of application of the paint. The treatment was thus found to be of help in only a small percentage of patients, and it was affected by the size, duration, and location of the pigmented patches.

Activity of the Adrenal Cortex.—Chakrabarti and Banerjee (*Indian Journal of Medical Research*, April, 1956) studied the adrenocortical activity in patients suffering from various common infectious diseases with a view to the rational therapeutic use of corticotropin. There is a profound fall in the circulating eosinophils after the injection of corticotropin, epinephrine, and 11-oxysteroids. This led to the development of a four-hour eosinopenic response test to parenterally given epinephrine as a means of evaluating the functional integrity of pituitary-adrenal axis. A 50% fall in the circulating eosinophils indicates normal adrenocortical function. In the present investigation, the eosinopenic response, four hours after the injection of 0.3 cc. of a 1:1,000 solution of epinephrine, was studied, and levels of serum sodium and potassium and blood ascorbic acid were estimated in patients suffering from pneumonia, meningococcic meningitis, tuberculous meningitis, typhoid, and tetanus during the active phase of the disease, to study the adrenocortical activity, and compared with values obtained in healthy adult subjects. The series contained 28 normal subjects, 25 patients with meningitis, 25 with tetanus, 17 with tuberculous meningitis, 23 with typhoid, and 22 with pneumonia. The mean fall in the circulating eosinophils was 59.8% in normal subjects, while the average response in the diseases mentioned varied between 25.6 and 35.4%. There was a significant decrease in the serum sodium value and blood ascorbic acid level and an increase in the serum potassium contents in all the patients. All these readings indicated hypoactivity of the adrenal cortex in the disease studied.

Congestive Heart Failure.—The good effects of Karrel's diet in the treatment of peripheral edema in congestive heart failure are due to its low caloric value and low sodium content. While studying the electrolyte composition of coconut water, Shah and co-workers (*Indian Journal of Medical Research*, April, 1956) found that it was low in sodium and high in potassium content, especially when compared to milk. They used it to treat a series of patients with congestive heart failure who had peripheral edema. Group 1 was given coconut water, and group 2 received Karrel's diet. The patients were weighed on admission. During the study, each patient's weight, total fluid intake, and urine output were charted. Examination of blood urea, nonprotein nitrogen, and urine was carried out, and electrocardiograms were made. Daily estimations of sodium and potassium content of the coconut water were made with a flame photometer. One 0.25-mg. tablet of digoxin was given three times a day to patients in both groups. It was noticed that coconut water administered in sufficient quantity is a potential diuretic. All the patients in group 1 had a marked diuresis with significant increase in the excretion of sodium and a marked loss of weight, as compared to group 2. Three of the patients on Karrel's regimen required mercurial diuretics after five days, while none of the patients in group 1 required any supplementary therapy. The clinical improvement was also striking.

The diuretic effect may be due to the low sodium and high potassium content of the coconut water. No toxic reactions were observed, but in patients with renal damage it should be used with caution.

Serum Cholinesterase.—In a report in the *Bulletin of the Calcutta School of Tropical Medicine* for April, Dutta and co-workers state that the main site of synthesis of cholinesterase is the liver. An estimation of this nonspecific enzyme in the serum may therefore be of value in assessing the degree of liver derangement associated with different lesions. The authors compared the cholinesterase content of the serum of 175 unselected hospitalized patients and 20 normal controls by measuring changes in pH. This usually ranged between 0.50 and 0.90. Low values of 0.22 to 0.40 were obtained in many patients with cirrhosis of the liver, nutritional edema, ascites, and severe anemia. Values within the normal range were obtained in patients with diabetes mellitus, hyperthyroidism, rheumatic fever, bronchial asthma, allergy, tropical eosinophilia, hypochlorhydria, duodenal ulcer, tonsillitis, giardiasis, appendicitis, and obesity. Simultaneous measurements of the cholinesterase and serum albumin were made on 30 random samples. No constant relation was found between the two, although a normal cholinesterase activity was generally found only in association with a normal serum albumin level. Low albumin levels were associated with low enzyme activity. Serial estimations rather than the single determination of cholinesterase and serum albumin may be of value in assessing liver function during the progress of a disease.

NORWAY

Campaign Against Obesity.—The Norwegian National Association for Diet and Health took a practical step in the campaign against overweight by issuing Prof. Haakon Natvig's new height-weight tables, which enable the reader to see at a glance whether he or she weighs too much. Natvig and co-workers in *Tidsskrift for den norske lægeforening* (June 1, 1956) point out that a strictly scientific basis by which to define the ideal or normal height-weight relationship is still lacking. Their own material has included both the fat and the lean, and more cannot be claimed for it than that it is based on a collection of about 15,000 healthy persons fit for work. Judged by this somewhat arbitrary standard, every third Norwegian between the ages of 30 and 49 years is overweight.

SWEDEN

Driving Licenses for Diabetics.—The liability of diabetics to develop diseases of the retina and lens has been considered so serious that up to 1950 the diagnosis of diabetes was enough in itself to disqualify an applicant for a driving license in Sweden. As the hardships thus inflicted seemed unnecessary in some cases, protests were made in parliament, and steps were taken to differentiate between diabetics with and without disqualifying retinal damage. In 1952 the public health service instituted a follow-up examination of 25 diabetics whose applications for driving licenses had been rejected earlier because they were suffering from diabetic retinopathy. Eight were considered fit to drive, 10 others were borderline cases, and 7 were clearly disqualified. Since 1952 the regulations governing the issue of driving licenses to diabetics have been modified with a view to a fairer discrimination in individual cases. At the same time the precaution has been taken to limit the duration of such a license to one year, after which reexamination is required. In 1955 Dr. Tore Kornerup found evidence of diabetic retinopathy in 47% of 1,000 unselected diabetics. His latest publication, in *Nordisk medicin* for May 24, 1956, deals with 1,137 diabetics over the age of 15 years who were examined with special reference to their fitness to drive a car. In 48% there was no sign of diabetic retinopathy, and in 34% the diabetics were fit to drive in spite of their retinopathy. Kornerup draws attention to the fear of sudden deterioration of vision on account of hemorrhages into the eyes of diabetics. This fear should be corrected by the fact that his material does not include a single patient in whom vision had suddenly been impaired by a hemorrhage or by an exudative retinopathy. To be sure, a sudden hemorrhage into the vitreous body may occur in a patient with advanced proliferative retinopathy, but for such patients driving is already out of the question.

Pulmonary Tuberculosis Relapses.—It has lately been argued that the frequency of relapse in patients with pulmonary tuberculosis has risen with the introduction of modern remedies. Hillerdal and Spangberg reported their observations on this matter in *Svenska läkartidningen* for May 11. They chose the year 1944 as representative of the preantibiotic era and the three years 1949-1951 as representative of the antibiotic era. In 1944 the death rate for sanatorium patients was 15%, and in the period 1949-1951 it was 5%. In 1944 the relapse rate for 104 sanatorium patients was 39%, whereas in the period 1949-1951 for 255 such patients it was 36%. These findings were based on a follow-up examination brought up-to-date in the autumn of 1955. A scrutiny of the 255 case reports showed that, whereas the relapse rate for the total was 36%, it was only 25% for those patients in whom chemotherapeutic measures had been combined with operative treatment. On the other hand, the relapse rate was 41% for those receiving chemotherapeutic treatment without operation. It would thus seem that the relapse rate in patients with pulmonary tuberculosis has fallen rather than risen in response to modern treatment.

Asbestosis.—The first case of asbestosis in Sweden was diagnosed in 1953. The patient was a 63-year-old man who had been employed in the asbestos industry for 17 years. When he first came under medical supervision he was suffering from dyspnea, cyanosis, and other manifestations of advanced asbestosis. This case led to a search for asbestosis among 60 workmen between the ages of 43 and 63 years who had been employed in the asbestos industry for periods ranging from 5 to 17 years. In eight of these, some degree of asbestosis was discovered. These men did not, however, present symptoms that could be traced to this condition. The discovery of these cases has now led to the inclusion of asbestosis among the reportable diseases and the adoption of measures calculated to prevent it in the future. The growing importance of asbestos as a possible source of industrial disease was emphasized by Ahlborg and Hansson in *Svenska läkartidningen* for May 25.

SWITZERLAND

Medical Education.—Many foreign students get their medical education in Switzerland, where a complete medical course is offered in Zurich, Bern, Basel, Geneva, and Lausanne. The course consist of 13 semesters, of which the first 5 are devoted to basic sciences. There are no clinical clerkships such as are found in France, but the student is initiated in the examination of the patient during a semester of preliminary clinical work. After 13 semesters of medical education the student must take a federal examination. Once in possession of his diploma, valid in all the Swiss cantons, the young phisician must take at least one year of internship. The interns work full time and are paid by the state. After four of five years a physician may qualify as a specialist and receive the title of F. M. H. (Federatio Medicorum Helveticorum). As a rule, every physician, even the most modest practitioner living in a suburb or the country, will not begin to practice before having served two or three years as an assistant physician in a large hospital. After that, at the age of about 30 years, he settles when and where he wishes. The university hospital clinic is a therapeutic and diagnostic center for medically indigent outpatients, a few of whom may be admitted to the infirmary (polyclinic). At the polyclinic each neophyte is responsible for one of the city's quarters, and he follows each patient's course after discharge from inpatient status.

Few physicians in Switzerland devote full time to scientific research, as the time of the assistant physicians is completely filled with caring for the sick. Recently, however, the larger chemical manufacturers have undertaken the total support of an assistant physician and provided him with a laboratory and technicians; the Swiss Academy of Medical sciences has granted research scholarships and subsidies; and the National Fund for Scientific Research has been created.

Clinical tradition and the struggle against excessive specialization characterize the spirit of the medical schools. For a population of more than 4 million, Switzerland depends on 4,500 practicing physicians (about one for every 1,000 people) and more than 2,500 assistant physicians in the hospitals. Furthermore, Switzerland has been able to maintain a free medical profession at a time when many other countries are organizing national health services in response to social necessities that Switzerland does not know.

Swiss Tuberculosis Association.—At a meeting of the Swiss Tuberculosis Association at Neuchâtel in April, Dr. M. Chauvet of Geneva said that, although the diagnosis of pulmonary diseases is being continually improved, there remain a certain number of puzzling cases in which biopsy of the prescalene ganglions or anatomic reflection of the hilar ganglions may provide valuable information. The operation is easy, can be done on an ambulatory basis, and presents no risk. Positive results are often obtained in patients with cancer, tuberculosis, Boeck's sarcoid, lymphogranuloma, and lymphosarcoma. Dr. Van Epercum of Davos, discussing chronic bronchitis accompanying tuberculosis, stated that the diagnosis depends on the search for eosinophils in the sputum and on the simultaneous establishment of a reduction of the pulmonary function in relation with the diminution of the caliber of the bronchioles. This diagnosis is important, as much because of the functional consequences of this disease as for the fact that the therapy of subjacent pulmonary tuberculosis is frequently efficacious only after this nonspecific factor has been eliminated.

Dr. Duggeli of Davos-Wolfgang reported his results with pyrazinamide. This product shows lasting activity only in combination with isoniazid. Duggeli used it on 65 patients with chronic cavitary disease after failure with other methods of treatment, giving 30 to 40 mg. of pyrazinamide and 4 to 6 mg. of isoniazid per kilogram of body weight. The effect, although irregular, appears to depend principally on the sensitivity of the bacilli to isoniazid. When there is resistance to 5 mcg. of isoniazid per cubic centimeter of stock solution, clinical and radiological improvement is observed in 75% of the patients; when there is resistance to 10 mcg., improvement is observed in only 50%. If there is a partial resistance, a halt in progress or an exacerbation occurs after about eight weeks, and, if there is total resistance, there is no radiological improvement. The secondary effects consist essentially in a hepatotoxic attack without aggravating the pulmonary tuberculosis, in contrast to the behavior of patients with epidemic hepatitis. Because of its toxicity pyrazinamide should be reserved for special cases. Dr. Nick of Arosa used pyrazinamide alone on nine patients who were resistant to all other medicaments. In all nine, drug resistance appeared after four to eight weeks with either a sudden or a progressive exacerbation of the disease. In three patients a combination of pyrazinamide and aminosalicylic acid gave good results.

Dr. Marki of Arosa said that cycloserine is eliminated in high concentration in urine, which explains its value in urogenital tuberculosis. Such secondary effects as anorexia, constipation, neurological disorders with epileptiform fits, fever, and sometimes purpura have been observed. Bacterical resistance develops rapidly. Cycloserine must be given with another antibiotic. Marki gave 12 patients 1 gm. of cycloserine three times a week alternated with 1 gm. of streptomycin twice a week. Even under these conditions, resistance may develop quickly. The method of action of cycloserine is unknown, since it is not very active in vitro. Professor Daddi used the drug on three patients and observed no resistance. He believes that it is advantageous to give it on three or four consecutive days followed by two or three days of rest. Dr. Favez of Lausanne said the indications for use of cortisone in the treatment of pulmonary tuberculosis depend principally on its anti-inflammatory action and include tuberculous pneumonia, recent miliary infections, and serous effusions. Cortisone, by diminishing the capillary permeability and the permeability of the ground substance, produces a functional isolation of the tuberculous focus. In old lesions this action is undesirable since it prevents antibiotics from reaching affected zones. On the other hand, in exudative lesions, where the specific focus is not important in regard to perilesional reaction, cortisone is of some benefit, for the patient is sick more from this excessive reaction than from his tuberculosis. Cortisone must always be applied under cover of antibiotics. At the beginning of such treatment, there is the risk of massive liberation of bacilli.

Drs. Tredelenburg and Vischer of Davos-Wolfgang reported that isoniazid-resistant bacilli are characterized by a slow growth, a reduced catalasic activity, and a reduction of the index of virulence for the guinea pig. The clinical course of infection with these organisms is usually favorable because they rarely produce thickening of the cavitary walls or distant disseminations.

UNITED KINGDOM

Toxicity of Carbimazole.—Fraser and his co-workers have surveyed the effect of carbimazole, with special reference to its toxicity, on 1,046 patients receiving it for thyrotoxicosis (*Brit. M. J.* 1:1453, 1956). It blocks the production of thyroid by interfering with the organic binding of iodide into tyrosine, probably by preventing the oxidation of iodide to iodine. The survey was carried on over a mean period of 9.2 months, and during this period 0.5% of the patients showed major and 1.5% showed minor toxic reactions. The minor reactions included rashes, nausea, headache, jaundice, gastric distress, and allergic phenomena (swelling, urticaria, and polyarthritis); major reactions were depression of blood-forming tissues and the drug-fever syndrome. Granulocytopenia occurred in only one patient. Most of the reactions were of the allergic type and occurred in patients with a history of allergy. The authors point out that carbimazole is the least toxic of the antithyroid drugs. It was responsible, however, for the death of one patient from aplastic anemia.

Serum Proteins in Pulmonary Tuberculosis.—Gilliland and his co-workers examined the serum proteins of 327 tuberculous patients by means of paper electrophoresis and correlated the pattern obtained with the clinical condition of the patients, using 28 contacts living in the same environment as controls (*Brit. M. J.* 1:1460, 1956). The patient's condition was recorded clinically, radiologically, and bacteriologically. In the tuberculous patients, there was a progressive fall in albumin concentration and a progressive rise in the gamma$_2$-globulin concentration as the extent of the lesion increased. These fractions were restored toward normal levels as the disease became arrested. There was no difference between the albumin—gamma$_2$-globulin ratio in patients with recent cases of tuberculosis and those with long-standing cases. The ratio became progressively lower, however, with increasing evidence of activity. After successful treatment with antituberculous drugs, the albumin—gamma$_2$-globulin ratio returned to normal. Whereas only 7 of the 327 patients had normal serum protein levels, nearly 50% had a normal sedimentation rate, showing how insensitive the latter is as an indicator of tuberculous activity. The authors concluded that the albumin—gamma$_2$-globulin ratio provides the most sensitive single index of the serum protein changes. Changes in the ratio appear to reflect the extent and activity of tuberculous infection and to mirror the recovery of the patient more closely than does the sedimentation rate.

Report of British Empire Cancer Campaign.—The annual report of the British Empire Cancer Campaign, which distributed over a million dollars for cancer research in 1955, has been published. At St. Bartholomew's Hospital, tobacco tar, tobacco tar plus dead tubercle bacilli, benzpyrene, and benzpyrene plus dead tubercle bacilli have been injected directly into the lungs of rats after thoracotomy. No tumors developed in the lung or the chest wall of the 10 rats injected with tobacco tar or the 9 injected with the tar plus dead tubercle bacilli, but, among the 9 injected with benzpyrene, one carcinoma and one sarcoma developed in the lung and one sarcoma arose in the chest wall at the site of the thoracotomy. The carcinoma developing in the lung as a result of benzpyrene injection is of added interest, as in this case the benzp$_y$rene was dissolved in cholesterol, which the workers at this hospital found on histological examination to be present in increased amounts in the human lung where there has been any chronic inflammatory process. At the Royal Beatson Memorial Hospital, Glasgow, 5 mg. of cigarette-smoke

tar and 0.25 mg. of resin from cigarette-smoke condensations dissolved in 0.2 ml. of arachis oil were injected into the right lung of 36 mice of mixed stock. The experiment was started in May, 1953, and all the mice are now dead. An adenocarcinoma developed in one mouse, in four others an adenoma developed in the right lung, and in one an adenoma developed in the left lung. As adenomas occur in about 20% of untreated mice over one year old, these tumors in the experimental mice are considered to be spontaneous.

Other Studies of Tobacco Tars.—At the Chester Beatty Research Institute, two experiments set up in order to test for carcinogenicity of cigarette tar, by its application to the skin of the mouse, were completed during the year. Both gave completely negative results. No malignant tumors were obtained, either with the whole cigarette tar or with the neutral fraction. In the experiment with the whole tar, one small papilloma appeared in the 21st month but had regressed three weeks later. These results are at complete variance with those of Wynder, Graham, and Croninger (1953). Equally negative results were obtained from injecting fresh cigarette tar subcutaneously into rats (no tumors after 20 months). Hamsters that had cigarette tar, either alone or mixed with soot, injected into the left bronchus, were tumor-free after 18 months. In other experiments, cigarettes made entirely from cigarette paper, in which chopped paper was substituted for tobacco, were smoked in the smoking machine, and the resulting tar was condensed. This tar, which is different in physical and chemical properties from cigarette tar, was shown by fluorescent spectroscopy to contain benzpyrene, but no tumors had arisen in 10 rats or 10 mice injected with the tar subcutaneously after one year. By means of the smoking machine, hamsters were exposed for five days a week to the entire smoke of 50 cigarettes daily, smoked at the rate of 6 an hour, for periods ranging from 12 to 20 months, without showing any tumor of the respiratory tract. In spite of the fact that their coats are stained yellow through exposure to the smoke, no skin tumors have developed. This agrees with Professor Passey's observation that life-long staining of the skin by tobacco smoke in man has never induced an epithelioma.

At Birmingham University, no skin tumors developed in a group of 50 mice painted twice weekly with a 20% solution of crude cigarette tar in acetone. Thirty mice survived 12 months and 12 survived 18 months. In another experiment, 30 mice were painted for one week with a 0.3% benzpyrene solution and subsequently painted twice weekly with the solution of tobacco tar. Four of them developed papillomas in the 18-month period, but no tumors occurred in this time in another group that received only benzpyrene. This suggests that the tar solution has a weak co-carcinogenic action. In a further series of animals given an initial treatment with tar followed by administration of croton oil weekly, only two small papillomas were obtained. This was to be expected from the application of croton oil alone. At the University of Leeds, 0.5 ml. of a solution containing 1 ml. of tar (the product of smoking 65 cigarettes in a smoking machine) in 50 ml. of arachis oil was introduced into the esophagus of 96 mice twice weekly for eight months. A control group of 96 mice were given the arachis oil alone, and an untreated group served as controls. No definite carcinoma of the lung had developed by the end of June. Eleven adenomas were observed: six in the experimental group, two in the arachis oil–treated group, and three in the untreated controls. Less than half the animals are still alive. In another experiment the tar was injected intratracheally into the lungs of a recently killed mouse. Incisions of the lungs after removal showed droplets of tar on the cut surface. Portions of the surrounding lung that contained droplets of tar were excised and implanted subcutaneously into animals of the same strain. No tumors developed at the site of injection.

At the Strangeways Research Laboratory, Cambridge, the effect of tobacco tar on human fetal lung tissue in vitro was studied. The neutral fractions of the condensate, obtained from individually smoked cigarettes, and tar from a smoking machine were used, the substances being suspended in serum. Doses containing about 0.014 gm. per milliliter of 3:4-benzpyrene revealed growth-promoting properties. After a fortnight's treatment, the condensate produced slight hyperplasia in 36% of the explants, but the smoking-machine tar induced more extensive hyperplasia in 62%. In contrast to benzpyrene, which induces hyperplasia in pneumomeres and bronchioli independently of their size, the growth-promoting effect of tobacco tars appeared mainly in the larger bronchioles. The hyperplasia consisted of increased proliferation of the bronchiolar lining, with enlargement of the cells and abnormal mitosis. At St. Bartholomew's Hospital, Finnish and Turkish cigarettes were found to have a very low arsenic content (0 to 5 mcg. per cigarette). Danish cigarettes, like British, American, Canadian, and Norwegian cigarettes, had a high arsenic content (60 to 90 mcg.). On the other hand, the small Danish cigars, or cigarillos, had a much lower arsenic content: 16 mcg. Italian cigarettes contained little or no arsenic: 0 to 1.5 mcg.

Soot.—At the Royal Beatson Memorial Hospital, Glasgow, soots from various sources were assayed for the presence of possible carcinogens. Railway engine soot, from funnels, yielded only trace amounts of 3:4-benzpyrene. In this regard, therefore, the railway engine is considered relatively unimportant as a source of air pollution. On the other hand, the gross particulate phase of diesel exhaust yielded 27% of acetone-extractable material, and a preliminary assay on the neutral fraction of this indicated the presence of an appreciable amount of 3:4-benzpyrene.

An examination of the case records of several hundred patients admitted to the Royal Marsden Hospital for cancer of the lung showed that in 422 men the average time in which smoking had been habitual was 39.3 years and the average age when smoking started was about 17 years.

Desoxyribonucleic Acid.—As formation of new desoxyribonucleic acid is known to occur exclusively in relation to mitosis and is considered to be the most significant event in the mitotic process, it has been presumed that the systems involved in desoxyribonucleic acid synthesis regulate the mitotic activity of tissues and that the malignant transformation might arise through irreversible changes in such systems. From studies of the duplication of desoxyribonucleic acid at mitosis as well as of various aspects of desoxyribonucleic acid biogenesis and catabolism, a possible relationship between the activity of nuclear desoxyribonuclease and the incidence of mitosis has been suggested. A histochemical approach seemed necessary in order to verify the conclusions drawn from studies with tissue homogenates. An attempt was therefore made at the Chester Beatty Research Institute to devise a method for localizing desoxyribonuclease in tissues. The general principle is to effect contact between a tissue section and a film of desoxyribonucleic acid, to allow sufficient time for the tissue desoxyribonuclease to act on its substrate in the film, and then to stain the unattached desoxyribonucleic acid remaining. Preliminary assays indicate that desoxyribonuclease can be localized in tissues by this method and that a satisfactory resolution can be attained.

Leukemia.—Resistance to busulfan (Myleran), in the sense of a specific refractoriness to the drug developing early in the course of leukemia, has not been seen in patients at the Royal Marsden Hospital who have been on maintenance therapy for long periods. After months or years, however, the activity of the disease gradually overcomes control by busulfan, although such control can sometimes be regained by increasing the dose. If busulfan is withheld, relapse is rapid, so that if another form of therapy is begun it should be given in addition to busulfan, which may later be withdrawn when control has been secured with the alternative therapy. It is reported that increasing numbers of patients with chronic granulocytic leukemia have now been treated continuously with busulfan for three or four years and for the most part have been in good health, living normal lives throughout. This is in contrast to the unstable state with recurrent relapse that occurs with conventional intermittent treatment by means of x-rays or drugs. Busulfan is as useful as any other drug used to treat chronic granulocytic leukemia and has definite advantages over the alternatives. It has yet to be shown, however, that radiotherapy followed by busulfan therapy is capable of prolonging life significantly.

At the Royal Marsden Hospital, 29 patients were treated with *p*-di-(2-chloroethyl)amino-L-phenylalanine, including 11 patients with Hodgkin's disease, four with lymphosarcoma, 13 with carcinoma, and one with malignant melanoma. The indications are that it will be of similar therapeutic value to *p*-di(2-chloroethyl) aminophenylbutyric acid in Hodgkin's disease and lymphosarcoma. In one of two patients with ovarian carcinoma, the rate of accumulation of ascitic fluid was slowed, and in the patient with carcinoma of the breast included in the series, skin

recurrences regressed, although serous effusions were not influenced. The drug was of no benefit in cases of bronchial (7), gastric (2), or pancreatic (1) carcinoma or in malignant melanoma. It was given orally in doses of 2 to 10 mg. No gastrointestinal side-effects were encountered, but patients who received the larger doses developed severe thrombocytopenia and neutropenia; however, they recovered rapidly from this when the drug was withdrawn.

Miscellaneous.—Eight children with verified neuroblastoma were treated at the Hospital for Sick Children, Great Ormond Street, with massive doses of cyanocobalamin, with injections of 1,000 mcg. on alternate days, the course being maintained for from two to two and one-half years where survival permitted. Of the first 19 patients treated, 6 were alive and well two to five years after the onset of the disease. Two of these survivors received only a short course in conjunction with operation and radiotherapy, but in the rest the response could be attributed to the cyanocobalamin—a survival rate of 25%. In addition to these long-term survivals, definite but temporary regression of the tumor was observed in four children and similar regression was apparent in two who were still under treatment. Thus, the administration of cyanocobalamin has led to temporary or lasting arrest of tumor growth in nearly 50% of the patients. The frequency with which regressive phenomena were noted indicates that this is a therapeutically induced and not a spontaneous effect.

A report from the department of radiotherapeutics at Cambridge indicates that intravenous administration of menadiol sodium diphosphate has a small but useful effect as a radiosensitizer in the radiotherapy of inoperable carcinoma of the bronchus. Although the effects are not spectacular, the results suggest that it is possible to improve the response of some human malignant tumors to radiotherapy by means of chemical radiosensitizers. A report from Harefield Hospital, Middlesex, gives details of an experiment to evaluate the effect of repeated administration of cortisone on the development of radiation damage in normal and malignant tissues of guinea pigs and mice. To date, the results indicate that the administration of 20 mg. of cortisone is more effective in reducing the damage to heavily irradiated skin when given daily for 21 days, beginning three weeks after irradiation, than when given before irradiation or daily for the 21 days immediately after radiation.

In the field of diagnostic radiology, positive correlation between the ultrasonic findings and the results of ventriculography and arteriography has been achieved in a number of cases of calcified tumor, astrocytoma, and glioma of certain areas of the brain. From a study of 265 intracranial tumors occurring in children, a new classification of such growths has been evolved at the Hospital for Sick Children, Great Ormond Street. This has proved to be both simple and prognostically significant. From this point of view, the worst types of tumor are the differentiating medulloblastoma and the diffuse astrocytoma, both of which appear to be universally hopeless. The cerebellar nodular astrocytoma gives the best prognosis. Although a longer follow-up will be necessary for certainty of an improvement in the management of these diseases, it would seem that such has possibly been the case in regard to the subtentorial astrocytoma, meningioma, and subependymal glioma.

At the Middlesex Hospital, a study of 80 patients with mucous gland tumors other than those of the major salivary glands has confirmed the fact that the prognosis of these tumors in such places as the palate, lip, and nose is worse than in the parotid, partly because of the increased frequency of the characteristically infiltrative basaloma and partly because of the increased difficulty of diagnosis and radical resection in some of these locations. Although the basalomas may show a good initial response to radiotherapy, recurrence always eventually takes place.

Bacillary Dysentery.—Dr. R. I. Hutchinson (*Month. Bull. Min. Health* 15:110, 1956) reported on the bacteriological examination of the bedclothes, patients' clothes, toys, dust, floor, floor brushes, furniture, walls, door handles, toilet seats, and lavatory floors in two residential nurseries during three outbreaks of Sonne dysentery—in the infants' department of a primary school during one outbreak, in one private house in which two families lived and in which 10 of 12 occupants were excreting Shigella sonnei, and in the nursery of a colony for mental defectives in which cases of diarrhea were occurring.

The results suggested that there is not a very great scatter of organisms into the environment from an infected person. Of 21 positive swabs from over 450 collected, 12 were from places or articles closely associated with the disposal of feces: the toilet seat, the lavatory floor, and chamber-pots; 4 were from clothes or bedding in intimate contact with a child passing frequent loose stools; and the remaining 5 were from dust in the vicinity of lavatories or from toys being handled by sick children. Of 34 toilet seats swabbed in houses or institutions in which there was a known excreter of S. sonnei, 11 were contaminated with this organism: 24 swabs were taken in institutions and 6 of these were positive; 10 were taken in private houses and 5 of these were positive. Blotting-paper patterns of the seats of 17 lavatories were made, and each one was placed over the original. A solution of gentian violet was emptied into the pan and flushed. In every case, macroscopically visible splashes appeared on the blotting paper. This experiment was repeated with a specimen of formed feces, a specimen of formed feces thoroughly triturated with broth, 5 ml. of an overnight broth culture of S. sonnei, and 100 ml. of heavily positive fluid feces. Only with this last sample were positive results obtained when the splashes were cultured. In other words, contamination of the toilet seat is likely to occur from flushing only in the early stage of the acute illness when heavily positive fluid stools are being passed.

Of 37 children observed while at stool, 17 handled the seat with either one or both hands while settling themselves on it. Six of these 17 children touched their face and mouth to a greater or lesser degree or sucked their fingers, thus transferring organisms from the toilet seat to the mouth. Hand swabbing after the children had visited the toilet for micturition, but before hand washing, no child having defecated immediately prior to the swabbing, gave the following results: In a primary school, during the seventh week of an outbreak, 2 of 118 children swabbed gave positive results. In two day nurseries, during the second and fifth weeks of an outbreak, no positive swabs were obtained from a total of 75 pairs of hands. In another day nursery, during the second week of an outbreak, 17 positive swabs were obtained from 35 pairs of hands. In a private house, the surprise swabbing of three asymptomatic children while at play produced positive swabs from the hands of a 5-year-old girl whose stool had been positive three days previously. Experimental contamination of the fingers in the laboratory showed that the organisms remained alive on the fingers for about three hours. The permeability of toilet paper was investigated by wrapping double thickness of the paper over the fingers, which were then pressed lightly on to solid, semisolid, and fluid stools for a few seconds. Five different types of paper were used, including two proprietary disinfectant brands, and in every case organisms penetrated through to the fingers with the fluid and semisolid stools. With the solid stools, 80% of the papers allowed the passage of organisms through to the fingers. It was found that S. sonnei could survive on a wooden toilet seat in a public lavatory for 17 days when the number or organisms in the contaminating drop was above 27,000 and for 3 days when the number of organisms deposited was 14,000. Less than 10,000 organisms died out in 24 to 48 hours. This was under conditions of light, temperature, and relative humidity occurring in a lavatory in daily use by the public.

Further investigations indicated that the survival time of S. sonnei outside the human body is increased by the absence of light and the presence of a low temperature and a high relative humidity but that an increased temperature, in spite of a high relative humidity, greatly curtails it. This suggests that the conditions found in many lavatories favor the survival of S. sonnei when contamination of inanimate objects occurs but that soiling of the perianal skin and the clothes in intimate contact with the body will not result in a long survival of the organisms, owing to the body temperature and skin humidity. It is therefore recommended that lavatories be placed in a brightly lighted, warm, and sunny position in all new constructions. As contamination and subsequent handling of the toilet seat and the use of easily permeable toilet paper are probably major factors in the spread of S. sonnei in private houses and institutions, the elimination of these hazards by proper placing of lavatories would do much to prevent spread of the organism, and thereby reduce the severity of epidemics.

CORRESPONDENCE

WHOLE BLOOD CLOTTING

To the Editor:—Certain aspects of the article "Effect of Bishydroxycoumarin (Dicumarol) on Clotting Time of Whole Blood" by Mayer and Connell in THE JOURNAL, June 30, page 806, merit further discussion. Until the appearance of this paper, there were serious questions about the rationale of Dicumarol usage. The general opinion had been that it did not affect significantly the clotting time of whole blood. Previous attempts to show changes in clotting time had given contradictory or inconclusive results. Accordingly, the question persisted, "If Dicumarol doesn't change the clotting time in the dosage given, how can one be sure it is an anticoagulant?" Because this question went unanswered, the argument for Dicumarol was weakened, and I believe that as a result many physicians were reluctant to use this drug. The details were discussed by me in a recent review article (*Am. J. M. Sc.* **229**:534 [May] 1955).

The report by Mayer and Connell, however, now answers this question. These authors showed clearly that Dicumarol does increase the clotting time of blood under conditions of clinical usage, as measured by an accurate technique, but that the latent period before attainment of the peak effect on clotting time is 10 days. Also, they showed a poor correlation between prothrombin time and coagulation time. This probably explains why earlier studies did not reveal an effect on clotting time: measurements were performed too soon after the onset of therapy. Very likely, the findings of Mayer and Connell also explain the troublesome anomalies in Dicumarol therapy, i. e., the occurrence of thrombosis at low prothrombin percentages and bleeding at prothrombin levels considered safe. In addition, they suggest a possible way to avoid these situations by using their standardized clotting time measurement, and by employing heparin until the standardized clotting time has reached 15 minutes. It is hoped that their technique for control of coumarin-derivative therapy will prove to be entirely satisfactory for general adoption in clinical medicine. On numerous occasions it has been found that some techniques, while satisfactory in the hands of the original investigators, are too difficult for others to reproduce. However, even if their method of measuring the clotting ability of the blood is not widely adopted, their findings are highly significant, in that they show that Dicumarol in clinical doses does increase clotting time. By answering the most serious objection to Dicumarol therapy, Mayer and Connell have greatly strengthened the argument for this type of treatment, and their report should go far toward overcoming the reluctance of many physicians to use Dicumarol where adequate laboratory facilities are available.

SOLOMON GARB, M.D.
Department of Pharmacology
Cornell University Medical College
1200 York Ave.
New York 21.

TOXIC EFFECTS OF AMMONIUM CHLORIDE

To the Editor:—The recent article by Sievers and Vander, "Toxic Effects of Ammonium Chloride in Cardiac, Renal, and Hepatic Disease" (*J. A. M. A.* **161**:410 [June 2] 1956) and the recent extremely informative review by S. P. Bessman, "The Role of Ammonia in Clinical Syndromes" (editorial, *Ann. Int. Med.* **44**:1037, 1956) point up the importance of ammonia in the production of toxic cerebral effects in cardiac, renal, and hepatic disease. Although the article of Sievers and Vander refers to the production of toxic cerebral effects after treatment with ammonium chloride, it is now known that the blood ammonia level is elevated in certain patients with heart failure, even without treatment with ammonium chloride (Bessman, A. N., and Evans, J. M.: *Am. Heart J.* **50**:715, 1955). These workers showed a parallelism between the blood ammonia level and the mental state. It is generally held today that the state of hepatic coma is produced, in part at least, by the accumulation of ammonia in the blood due to the inability of cirrhotic patients to clear ammonia from their blood (Phillips, G. B., and others: *New England J. Med.* **247**:239, 1952; McDermott, W. V., Jr., and Adams, R. D.: *J. Clin. Invest.* **33**:1, 1954).

Sodium glutamate has been suggested by Walshe (*Lancet* **1**:1075, 1953) as a therapeutic agent in hepatic coma. According to Bessman (*Ann. Int. Med.* **44**:1037, 1956) this substance could prove helpful in two ways: (1) by combining with ammonia to form glutamine, which transports ammonia to the kidney for excretion, and (2) by transamination with pyruvic acid to form alpha-ketoglutaric acid, an intermediate of the Krebs cycle. It has been noted by many investigators that glutamate is not uniformly successful in hepatic coma (McDermott, W. V., Jr., and others: *New England J. Med.* **253**:1093, 1955). It seems important to speculate why this is so. The synthesis of glutamine proceeds in homogenates of liver, kidney, or brain, provided adenosine triphosphate (ATP) is supplied as a source of high-energy phosphate bonds (Weil-Malherbe, H.: *Physiol. Rev.* **30**:549, 1950). The reaction is formulated by the equation:

$$\text{Glutamic acid} + NH_3 + ATP \rightarrow \text{glutamine} + ADP + \text{inorganic phosphate}.$$

It is known that glutamic acid inhibits the anaerobic glycolysis of brain slices (Krebs, H. A.: *Biochem. J.* **29**:1951, 1935). Weil-Malherbe (referred to above) believes that this phenomenon may be due to a competition between glucose and glutamic acid for available adenosine triphosphate, and accordingly the inhibition is reversed by its addition. Thus the presence of adenosine triphosphate may be the limiting factor regardless of whether glutamic acid may be of benefit in hepatic coma or in the other states where toxic actions from ammonia may cause cerebral symptoms. Glutamic acid alone may actually be harmful if excess adenosine triphosphate is not available, according to Weil-Malherbe's theory.

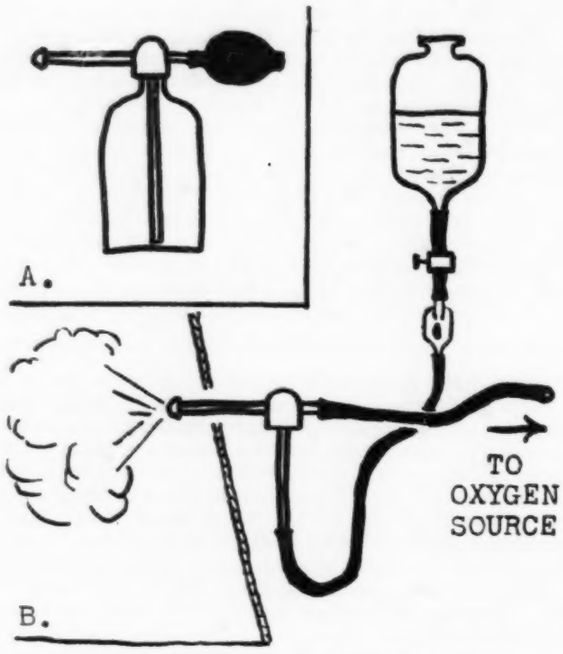
Recently, I treated two cardiac patients who developed mental symptoms (confusion, stupor, disorientation) associated with long-continued use of ammonium chloride. At first the results were poor after treatment with glutamic acid (L-Glutavite) for 72 hours. When adenosine-5-monophosphate (A_5MP) was added (100 mg. in gel intramuscularly daily) the response was phenomenal within four to six hours of the first dose. The glutamic acid treatment was continued. It has been shown that the injection of A_5MP causes a significant increase in the body stores of adenosine triphosphate (Albaum, H. G., and others: *J. Clin. Invest.* **30**:525, 1951). In the two cases referred to above, the treatment was continued for five days with a very satisfactory result. Likewise, in one case of hepatic coma in which the patient was treated with glutamic acid given intravenously, with indifferent results over a 36-hour period, there was arousal from coma when A_5MP was given according to the technique described above. In another case of metastatic carcinoma of the liver with coma, presumed to be hepatic in nature, injections of A_5MP in the above noted dosage roused the patient from coma for several days. Subsequently, of course, the patient died from his disease. No glutamic acid was given this patient. In summary, in the toxic states caused by ammonium, besides glutamic acid, excess of adenosine triphosphate is necessary for the ammonia to be cleared, and a lack of this substance could explain some of the failures with glutamic acid reported in the literature.

LOUIS PELNER, M.D.
1352 Carroll St.
Brooklyn 13, N. Y.

SIMPLE DEVICE FOR PROVIDING HUMIDIFIED OXYGEN

To the Editor:—"Cold steam" is an important adjunct to the treatment of croup, severe pneumonia, and several other conditions. Because commercially constructed steam tents are not always at hand, a number of substitutes are in common use. The following method is suggested because of its simplicity, inex-

pensiveness, and accessibility. The bottle and rubber bulb are removed from any ordinary atomizer that is capable of producing a sufficiently fine spray (see figure, *A*). By means of rubber tubing, the oxygen supply is joined to the inlet from which the bulb was removed. A water reservoir is connected to the fluid inlet tube of the atomizer head through a drip chamber. This permits the flow of water and that of oxygen to be regulated independently. The nozzle of the atomizer is then introduced through an opening in the tent.



A, satisfactory type of atomizer; *B*, assembled apparatus.

This apparatus (see figure, *B*) has been found more stable and easier to regulate than other such devices. As with any oxygenating equipment, one must be careful to see that all connections are tight. The flow of water and of oxygen should be inspected periodically. In addition, one should not allow the water reservoir to become empty, for this would permit the entrance of air.

HENRY L. GREEN, M.D.
13340 Northfield Blvd.
Oak Park, Mich.

TREATMENT OF EARLY MAMMARY CANCER

To the Editor:—The guest editorial "Treatment of Early Mammary Cancer" (Elman, R.: *J. A. M. A.* **161**:972 [July 7] 1956) deserves commendation. The author wisely points out that the optimum treatment for early carcinoma of the breast is surgical removal while the disease is still confined to the breast. Since this, unfortunately, is not always possible, "the most that should really be claimed for therapy in cancer is significant and sometimes gratifying prolongation of life." The author has some strictures on simple mastectomy combined with radical postoperative radiotherapy that deserve comment. First, he questions whether there is supportive evidence in favor of the Edinburgh program. If he will glance at my article published in the *American Journal of Roentgenology* (**72**:923 [Dec.] 1954), he will see reports on 458 cases treated by such method (elsewhere than in Edinburgh) with five-year survival rates comparable to the excellent figure reported by McWhirter. Second, he quotes an evaluation of the Edinburgh method recently published by Ackerman, which does not perhaps give all the facts. Careful reading of Ackerman's report shows that the "considerable radiation morbidity" consisted of undesirable reactions in 47 of 1,882 cases, a morbidity rate of 2.5%. A little inquiry would have revealed that most of these cases had been treated during the early World War II years, when the staff was depleted and treatments were frequently interrupted by air raids. Every experienced physician knows that radical surgery also carries a morbidity rate that is occasionally quite disabling. Next, Ackerman reportedly noted a relatively high persistence of disease in the radiated cases. Well, there is unfortunately also a relatively high persistence of disease in the surgically treated field, if one considers the entire thorax; approximately one-third of persons surviving radical mastectomy 5 years unfortunately die from breast cancer before the 10th year, and additional numbers continue to die of the disease in ensuing decades. This problem exists in any therapeutic method in this particular type of cancer.

Finally, the writer of the editorial quotes Ackerman as noting no objective evidence of sterilization of lymph nodes containing cancer. A little reflection should show that this is not surprising, since the nodes ordinarily removed for study at a late stage are precisely those that have failed to respond to treatment. The hard, fixed supraclavicular and high axillary nodes of other cases that have disappeared under proper radiotherapy will not ordinarily be excised. Incidentally, McWhirter and other radiotherapists do not claim that radiotherapy sterilizes cancer in treated lymph nodes in all cases. Perhaps the most remarkable feature of the visit of this distinguished pathologist to Edinburgh was the fact that, for the first time in international cancer study, a visiting expert confirmed the diagnosis of cancer in over 98% of a series of almost 2,000 consecutive patients subjected to a given treatment program. This is a unique episode in cancer study. There are many areas in the United States where qualified radiotherapists are now readily available to patients with early mammary cancer; the evidence from Edinburgh and other sources shows that there are two effective alternate methods of treating such cases. These are (*a*) radical mastectomy, as the writer of the editorial proposes, and (*b*) simple mastectomy plus radical postoperative radiotherapy. In some hands the five-year survival rate is slightly improved by the latter program, which, incidentally, is applicable to the vast majority of patients presenting themselves for treatment, in contrast to the radical program, which is strictly applicable only to those with disease in clinical stage 1 or 2.

L. HENRY GARLAND, M.D.
450 Sutter St.
San Francisco 8.

THE AUTOPSY

To the Editor:—The letters and comments provoked by Dr. Starr's guest editorial (*J. A. M. A.* **160**:1144 [March 31] 1956) testify to the sharpness of his criticism of current postmortem practice. There can be little doubt that, to the extent that university departments of pathology fail to apply modern techniques and investigative attitudes in the assay of autopsy material, Starr's dim view of the "routine" autopsy is justified. However, neither Starr's editorial nor the comments that it elicted make mention of the autopsy in nonuniversity hospitals, where the vast majority of postmortem examinations are conducted. In the state of Connecticut, by last available report, 605 autopsies were performed at the University Hospital, in contrast to more than 3,000 autopsies in 20 nonuniversity hospitals. In eight of the latter, which had no training program in pathology, an estimated 700 autopsies were reported. In the 12 other hospitals where accredited residency training programs in pathology were operative, there were 2,300 postmortem examinations. Deficiencies of budget and staff and of instrumentation and technical skills in most nonuniversity pathology departments make it virtually impossible for postmortem examinations to be pursued on the experimental plane that Starr advocates. Even though unhappily this may be so, the autopsy in these institutions still fulfills other important ends, which he mentions only cursorily.

In the hospital with neither university affiliation nor resident training program, the autopsy may be performed simply with a view to determining, if possible, the cause of death or to provide a spot check on the diagnostic accuracy of the clinical staff. Even these limited objectives have their value. In the nonuniversity hospital with a training program in pathology, these objectives are also fulfilled, but, in addition, the so-called

routine autopsy provides cumulative experience for the trainee. Of greater importance, it presents an opportunity to reconstruct the progress of the disease state from its incipiency to its culmination on the postmortem table, taking into account all of the available historical and clinical data. Each autopsy becomes a stimulating exercise in the understanding of the genesis, flowering, and end-result of the disease state. This is dynamic pathology in its conceptual sense, and for this complicated instrumentation is not essential. However much pathologists may desire to utilize available modern experimental techniques in their autopsy investigations, most pathologists, and the majority of them are located in nonuniversity institutions, view the belabored "routine" autopsy as an opportunity to increase their own store of knowledge and, through programed conferences, to transmit their findings to their clinical colleagues. This is a good that requires no defense and no apology.

PAUL D. ROSAHN, M.D.
Pathologist
New Britain General Hospital
New Britain, Conn.

GRANULOMA OF AXILLAS

To the Editor:—A preliminary report on the suspected cause of an unusual eruption on the axillas of women is worthwhile for diagnosing and possibly averting this new disease. Since the presentation of two cases at the Chicago Dermatological Society meeting on May 16, 1956, our colleagues have been seeing similar cases. In our series of four cases, women in the middle-age group were affected. The eruption was limited to the axillas, particularly the hairy area. The lesions were papules and nodules, with the highest point resembling a vesicle. Fluid was not obtained from the pseudovesicles. Clinically, the eruption was unlike any cutaneous disease, common or uncommon, previously seen on the axillas. For this reason, a biopsy was performed on three patients and repeated on the first one several weeks later. Histopathological findings were those of a tuberculoid reaction, suggesting the presence of a foreign body. The sections suggested the features of a silica or talc granuloma. In our cases, the source of the foreign body was probably the introduction of some substance into abraded areas, caused by shaving the axillas. This probably occurred when a stick deodorant containing zirconium was applied once or twice daily on the skin of the axillas.

We now suspect that the cause of this unusual eruption on the axillas is zirconium, a metallic element similar to titanium and silicon. The history of contact with a stick deodorant containing zirconium is common to all four women, and it is a reasonable explanation for the localization of the eruption on the axillas. The course of the disease is unknown to us at this time. Gradual improvement of the eruption in the first patient leads us to believe that spontaneous cure, although slow, is likely.

LEONARD F. WEBER, M.D.
IRENE NEUHAUSER, M.D.
LOUIS RUBIN, M.D.
ALBERT H. SLEPYAN, M.D.
HAROLD SHELLOW, M.D.
Department of Dermatology
University of Illinois College of Medicine
840 S. Wood St.
Chicago 14.

FOREIGN BODY OF LONG STANDING

To the Editor:—A native of Scotland, who has lived in the United States for many years, has been under my observation for about 10 or 12 years, principally for recurrent episodes of pneumonitis, which were presumed to be initiated by a chronic bronchiectasis. These attacks would occur at least every six months and seemed to be of increasing severity. The patient recalled that she always "took pneumonia" easily, and she remembered her chronic productive cough as ever-present from early childhood. In the interim she married and raised three children, submitted to a cholecystectomy for cholelithiasis and cholecystitis, and was hospitalized once for a bronchoscopic examination, which was not performed because she had no sputum after a period of observation of 48 hours. Since she has been under my care I have suggested many times that a bronchoscopic examination would be enlightening, but, for some reason not clearly understood at this time, the examination was never performed. With the advent of antibiotics, her episodes of pneumonitis, while severe in the early stages, responded rapidly to therapy, and the need for more intensive investigation of the cause of the disorder seemed increasingly less important to the patient—and, I might add, to her medical consultant as well.

On Jan. 7, 1955, this patient suffered a violent paroxysm of coughing, during which marked dyspnea was present with cyanosis; as she described it, "I felt surely I could not ever breathe again." Finally, with a superphysical effort she expectorated a

foreign body, which can be seen in the accompanying illustration. It resembled a piece of charcoal and was not particularly fragile. Upon further consideration the patient recalled an incident occurring in Scotland when she was 5 years of age. She was playing one day and eating beechnuts at the same time. She distinctly recalled choking on a beechnut kernel, after which she had labored breathing; her cough with the subsequent symptoms for 63 years dated from that time. For several days after expectorating this charred mass she had mild hemoptysis, but she has been asymptomatic since being free of annoying cough for the first time in 63 years. I have not searched the literature on the subject, but it seems that this case of a foreign body of this type remaining undetected in a bronchus for so many years must establish some sort of record.

W. A. MONAGHAN, M.D.
1217 Obispo
Long Beach, Calif.

MISCELLANY

The following memorandum was received by the Editor and will be of interest to those who have read the Guest Editorial on page 38.—ED.

OPERATION LAOS

Aim

As the mission is now completely organized and the equipment has already left by Navy transport for Indo China, I would like to restate the plans. The aim of Operation Laos remains the same:

1) To give medical care both to the people of the mountains and of the cities through the Minister of Health of the Kingdom.

2) To illustrate to these people some of the nature, principles and achievements of America, and especially to show them that we are anxious to help them on a person-to-person basis, at the grass root level of diplomacy.

Equipment

1) The Willys Corporation has donated to Operation Laos a specially constructed jeep.

2) The Pfizer Laboratories Division of the Chas. Pfizer Co., Inc., of Brooklyn, New York, has donated almost $100,000 worth of medicines.

3) Mead Johnson Company of Evansville, Indiana, has donated thousands of bottles of vitamins and of a protein extract.

4) Walt Disney's Studio has donated a battery run portable movie projector and special cuts of Fantasia and other comics.

5) Johnson and Johnson of New Brunswick, N. J., has donated all bandaging materials.

6) A. S. Aloe & Co. of St. Louis has donated my surgical instruments.

7) The U. S. Navy has donated an eight months supply of field rations and they have also transported all the equipment to Indo China.

8) The U. S. Information Agency has pledged a battery run tape recorder.

9) The Meals for Millions Foundation has given us 5000 pounds of a multi-purpose food.

Approval

This mission has the approval of the State Department, the International Cooperation Administration, and the Laotian government. Senator Mike Mansfield, on the floor of the Senate on April 9 wished our mission "Godspeed."

Backing

We shall work under the auspices of the International Rescue Committee however, the majority of the financial support will come from the royalties of "Deliver Us From Evil" and from a grant of the Research Corporation of New York City. There are many individual contributions of fellow Americans also.

The Reason Why

If America as a nation (composed of individuals such as us) ignores the Asian's physical needs while we hand him pious platitudes, we justify the Communists' characterization of our religion as an "opiate of the peoples," a "pie in the sky by and by." While we are preaching God's precepts and the Voice of America proclaims our good intentions, the Communists are moving in among the naked masses of humanity who never saw a missionary, nor heard a radio; and they appear to practice exactly what *we* preach. This was seen by the members of our unit and illustrated to us the need for a mission such as this, over and above the already functioning government organizations.

We shall be a small mobile unit composed of men who have had experience in this line (Haiphong, Viet Nam) and who now fully realize the significance of our actions. We want to be on the offensive for America, not just denying what the Communists say about us, but getting there and doing something about it. We shall try to translate the democratic ideals we *do* possess into Asian realities that they *can* possess. Our instrument for this shall be medicine. The future of Laos is shrouded in a mantle of uncertainty heavier to pierce than that associated with any of the other newly-independent countries of Asia. Rather than curse the darkness perhaps we can light a few candles.

Channels

We shall work through the Ministry of Health of the Kingdom of Laos, with the already established (though by American standards inadequately trained) village dispensaries. In this way we shall avoid the impression of meddlesomeness and/or neocolonialism.

Time

This is a pilot project. Because of this and because of the monsoon season, there is only a six month period when the roads of the mountains are useable. Our present intention is to remain but eight months. Estimated time of departure is August of 1956.

Method of Action

Vientiane, the capital, shall be our headquarters. Upon arrival we shall pay our respects to the Minister of Health, Doctor Souvanna Vong. Then with one of his "nurses" or "corpsmen" we shall leave the city and drive to a mountain tribe, whichever he suggests. Our jeeps will be loaded with medicines and other equipment. We shall go to the tribes of the Meo, the Man, the Nungs, the Muongs, etc. We will present ourselves to the village "ban" or chief. He will show us a place to build our tents and park the vehicles. Then we shall throw a baseball around, play with the kids, and that evening eat with the villagers. Their rice (well boiled) and our myriad of small cans of food will be an interest to them.

Then that night we will show them a movie, Bambi, Fantasia, Snow White, or another Walt Disney type film. The Laotian Ambassador in Washington is making a sound track for this in Lao. This will be a great thrill to the people of the villages. Most of them have never seen a white man. None have seen a doctor (there is one physician for the two million people of the kingdom). After the movie the kids will say, "Not only do Americans have colorful animals who dance and sing, but the animals can speak Lao."

The following morning we shall say, "Look, we possess medicines that can cure your Yaws, your Congenital diseases, your Malaria, your Trachoma. We possess a type of miraculousness . . . let us help you." We will treat the people for four or five days. Each night showing them another movie, constantly telling them of us and our life, and learning the good characteristics of their honest and gentle Buddhist life. We have no intentions of trying to foist our existence on them, nor convert them. The only aim is 50% medicine and 50% to let them have contact with Americans who want simply to help them.

The corpsmen who will do this have had equivalent experience in Haiphong, North Viet Nam. They did a superb job when they did not realize the full significance of their task. Now they shall do a better job. The work that they have done has become a legend, now reaching high into the mountains. The American Doctor and his corpsmen are returning.

Under the Geneva treaty no military personnel are allowed into this area. Therefore we are going as civilians on a purely personal basis. We will not be a member of the State Department or any affiliated government organizations. Rather we shall be under the auspices of the International Rescue Committee, a private organization.

After a week or two in one area we shall return to the capital of Vientiane to get a hot shower, restock, and then leave for another tribe. In no way shall we try to satiate any one group. We want them to want us to return. We want their allegiance, for their own central government.

Then when the Communists say that we are monster Americans, that we roast infants, and kill adults . . . I believe these tribal people shall say that they know differently now.

By always working with the Laotian Public Health Department we will leave behind us a skeletal-type tribal medical setup. We will explain that the people in the mountains can have more of these medicines of ours by going to Vientiane and asking their own nation's Public Health Department for them. Everything shall be done with and thru Vientiane.

Norman Baker and I speak French, and Dennis Shepard is studying it. Peter Kessey is a Texan. I have working knowledge of the Tonkin dialect. All this will help; but most especially what will make our mission a success is that we are enthusiastic and anxious to tell these people a little about America. We wish to explain it to them on a hand-to-hand basis, at the grass root level. We want to show them that America believes in help and that Americans are for the most part very fine fellows.

Thomas A. Dooley, M.D.
Executive Director
Norman Baker
Peter Kessey
Dennis D. Shepard

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Rupture of the Heart After Myocardial Infarction. J. F. Maher, G. K. Mallory and G. A. Laurenz. New England J. Med. 255:1-10 (July 5) 1956 [Boston].

At the Mallory Institute, the pathology department of the Boston City Hospital, interest in cardiac rupture as a fatal complication of myocardial infarction was renewed by the observation of several such cases in rapid succession. This suggested an increased frequency of this complication and raised the question whether the newly introduced therapeutic methods favor cardiorrhexis. Recent or healing myocardial infarction was found in 183 of 1,928 autopsies during the two years ending June 30, 1954. Clinical histories were available in 178 of the 183 patients, and 21 patients with cardiac rupture were found among the 178 reviewed clinically. Eleven of the patients were men and 10 were women. Earlier reports also indicate that cardiac rupture occurs as often in women as in men, despite the prevalence of myocardial infarction in men. About half of the ruptures occurred during the first five days after the onset of chest pain due to myocardial infarction. Cardiorrhexis occurred in only 2 of the 66 hearts (3%) that, in addition to acute infarction, showed an old healed myocardial infarct, whereas there were 19 cardiac ruptures in 117 patients (16.2%) who had only acute or healing myocardial infarction. This agrees with earlier observations that myocardial fibrosis is much less common in infarction that terminates in cardiac rupture.

There were 123 patients who had some evidence of congestive failure, and 7 (5.7%) of these hearts ruptured, whereas of the 50 hearts not in failure 14 (28%) ruptured. Treatment with diuretics, antibiotics, or digitalis could not be considered responsible for the recent higher frequency of cardiac rupture. It may be expected, however, that the injudicious use of levarterenol or anticoagulants or the abuse of the bed-and-chair regimen might result in rupture of the heart. Prevention appears to be the only solution to the problem of cardiac rupture. Rest must be emphasized during the early period after infarction, when the diagnosis is being established. Hypertensive patients and those who have no evidence of heart failure in particular must be kept at rest if rupture is to be prevented.

The Distribution in England and Wales of Mortality from Coronary Disease. W. J. Martin. Brit. M. J. 1:1523-1525 (June 30) 1956 [London, England].

The rapid rise of mortality attributed to coronary disease during the past 30 years has been one of the chief features of the vital statistics of England and Wales. This report is concerned chiefly with the trend of mortality from coronary disease during the last 15 years. It is shown that at ages of 35 and over a twofold to threefold increase has occurred in England and Wales in the death rates attributed to coronary disease during this 15-year period. The death rate in males has increased more rapidly than that in females at the younger ages, 35 to 54 years. The regional distribution of deaths attributed to coronary disease is not very different from that of deaths from all causes, the death rates being highest in the northern counties. For both sexes mortality is high in the urban areas as compared with the rural, but the difference is more distinct for males. Although the 1951 analysis of mortality (1% sample) showed a steep gradient for mortality from coronary diseases with social class, the geographical differences in the mortality ratios in 1950 to 1952 cannot be explained by variations in the social class structure of the populations at risk. The proportion of males in social classes 1 and 2 in different areas was not correlated with the level of their mortality ratios, and it seems that some other characteristics must be responsible for the widely varying level of mortality in the different areas. In each type of area—county borough, urban district, and rural district—there was close correlation between the male and female standardized mortality ratios from coronary disease.

Serum Transaminase: New Aid in Diagnosis of Coronary Thrombosis and Hepatic Affections. N. U. Bang, K. Iversen and S. Madsen. Ugesk. læger 118:599-605 (June 2) 1956 (In Danish) [Copenhagen, Denmark].

In human serum, measurable amounts of transaminase are constantly demonstrable. Serum transaminase activity is increased in various disease conditions. Special interest attaches to the course of the reaction in acute myocardial infarct and diseases of the liver. Increased values are not found in infectious diseases, malignant diseases, metabolic diseases, or degenerative diseases when acute tissue degeneration is not present in the myocardium, skeletal musculature, or liver parenchyma. The values are considerably increased in acute myocardial infarct, rheumatic fever with active myocarditis, and especially in hepatic affections with parenchyma injury. The preliminary reports indicate that the glutamic oxalacetic transaminase increase in acute hepatitis begins as early as in the preicteric phase and seems to follow and mirror the clinical condition. According to a preliminary report, a moderately increased transaminase activity is found in occlusion jaundice as long as the occlusion lasts. Three cases, two in patients with coronary thrombosis and one in a patient with acute hepatitis, showed characteristic curves.

Pneumonia and Bronchopneumonia Treated by Sulfamides and Antibiotics. H. Durieu, F. de Clercq, A. de Coster and others. Acta clin. belg. 11:105-131 (March-April) 1956 (In French) [Brussels, Belgium].

The authors studied the therapeutic results obtained with sulfamides and antibiotics in patients with pneumonia and bronchopneumonia from records of the Clinique Médicale covering a 25-year period. Conclusions can have only an indicative value because of the disparities of the considered series and the unequal conditions of observation. The records examined were of 468 patients with pneumonia and 390 with bronchopneumonia. Of the patients with pneumonia, 126 were treated by sulfamides, 165 by antibiotics (usually penicillin), and 177 (the control group) by neither. The mortality rate in the control group was 30%, in the sulfamide-treated group 20%, and in the penicillin-treated group 5%. The seriousness of both diseases increases with age. Uremia indicates a poor prognosis, while leukocytosis seems to have little bearing on prognosis. No influence on prognosis is exerted by blood eosinophilia during the febrile phase of illness. It was encountered in 25% of the control group cases, in 13% of the sulfamide group, and in 57% of the antibiotic group. It was found in 80% of all 468 patients during convalescence. The mortality rate was higher when the patients were treated late in the course of the disease, this being especially true in those who were treated by sulfamides. Treatment during the first two days of illness seems to be a crucial factor in the mortality rate. Duration of the febrile phase is shortened in some of the patients treated with sulfamides or, especially, antibiotics. By the fourth day of illness 13% of the antibiotic-treated patients were apyretic, while only 4% of the control group and 4% of the sulfamide-treated group were apyretic at that time. Shortening of the duration of fever is the most obvious benefit derived from the antibiotics. Small doses (200,000 U.) seemed as active as the moderate (400,000 U.) or larger (1 million or more U.) doses

---

The place of publication of the periodicals appears in brackets preceding each abstract.

Periodicals on file in the Library of the American Medical Association may be borrowed by members of the Association or its student organization and by individuals in continental United States or Canada who subscribe to its scientific periodicals. Requests for periodicals should be addressed "Library, American Medical Association." Periodical files cover 1947 to date only, and no photoduplication services are available. No charge is made to members, but the fee for others is 15 cents in stamps for each item. Only three periodicals may be borrowed at one time, and they must not be kept longer than five days. Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

of penicillin. Signs of pulmonary consolidation regress a little more rapidly in treated patients, but by the third week the three categories of subjects had approximately the same (14-16%) proportion of significant pathological phenomena. Serious infectious complications, both local and distant, are less frequently observed in patients treated with penicillin. The use of large doses of penicillin is not justified, as the pneumococcus remains almost entirely sensitive to this drug. The fear among doctors of a regularly increasing resistance of the pneumococcus to penicillin is not verified by the findings of bacteriologists.

According to their records, the 390 patients with bronchopneumonia were divided into a control group of 254, a sulfamide-treated group of 35, and an antibiotic-treated group of 101. Since the sulfamide group was so small, valid comparisons are difficult and will have a very relative value. The mortality rate in the control group was 55%, in the sulfamide group 26%, and in the antibiotic group 16%. Although uremia is an ominous sign for prognosis, leucocytosis does not seem to have prognostic value. Contrary to the case in pneumonia, blood eosinophilia during the acute phase in bronchopneumonia seems favorable. Treatment with sulfamides and antibiotics moderately shortens the duration of fever, this effect being more evident with penicillin. Infectious complications are tremendously decreased by treatment with sulfamides and still more by antibiotics. The bronchopneumonia records showed 30% failures after treatment with sulfamides and antibiotics, whereas the pneumonia records showed 14% failures after these treatments. It is likely that the characters of the causal micro-organisms and the fragility of the host explain the high rate of failures in the bronchopneumonia cases. Penicillin may be used routinely in the beginning of the treatment, but it must be quickly replaced by a wider-range antibiotic if a therapeutic effect is not obtained after a few days of treatment.

Quantitation of the Activity of Rheumatoid Arthritis: 2. Recession of Morning Stiffness as Patients Go into Remission. J. Lansbury. Am. J. M. Sc. **232**:8-11 (July) 1956 [Philadelphia].

Morning stiffness is an exceedingly common manifestation of active rheumatoid arthritis at all ages. A review of 100 consecutive cases showed that it was present in 97% of these patients at the time of the initial interview. Morning stiffness can be quantitated by observing its duration rather than its intensity. Most patients can readily distinguish stiffness from pain, and they can generally accurately identify its duration after rising in the morning. This paper considers "duration of morning stiffness" as it relates to the over-all activity of rheumatoid arthritis. The data presented were collected from records extending over a period of 10 years. The records of 45 patients personally observed by the author indicated that the average duration of morning stiffness at the time of the first office visit was 3.5 hours. There was a correlation between duration of morning stiffness and activity of the disease as measured by the sedimentation rate of erythrocytes, but the duration of morning stiffness appeared not to be related to age, sex, duration of disease, or hemoglobin concentration. The author presents three graphic analyses, which indicate that hours of morning stiffness decline in a regular trend as the patient goes into a remission. Duration of morning stiffness is, therefore, a valid index to the general or fibrositic component of rheumatoid activity and so deserves to be routinely recorded in progress notes.

Quantitation of the Activity of Rheumatoid Arthritis: 3. The Maximum 5-Minute Cutler Sedimentation Rate as an Index. J. Lansbury. Am. J. M. Sc. **232**:12-16 (July) 1956 [Philadelphia].

The sedimentation rate has been accepted as a rough guide to the degree of systemic activity in cases of rheumatoid arthritis. Various methods for performing the test are in vogue, such as the Cutler, Westergren, Wintrobe, and Rourke-Ernstene techniques, but the results obtained with these various methods cannot be compared, since their values, for both the normal and the abnormal, differ from one another. The author uses the Cutler method, which differs from the others in that a wide-bore tube is employed. The graph obtained with the Cutler method furnishes two types of information: (1) the total fall of erythrocytes at the end of one hour, and (2) a series of 5-minute decrements that produce a curve from the starting point at zero to the 60-minute end-point. The shape of this curve gives information not apparent from the 60-minute end-point alone. The author has for years used the five-minute index as a measure of the activity of rheumatoid arthritis.

The maximum five-minute fall of erythrocytes observed by the Cutler sedimentation technique averaged 5.6 mm. in a series of 100 consecutive patients with rheumatoid arthritis at the time of their first interview. A statistical analysis of the five-minute erythrocyte sedimentation rate in 10 patients with rheumatoid arthritis going into remission indicated a trend toward normal, both for individuals and for the group, which is sufficiently regular to validate the Cutler five-minute erythrocyte-sedimentation rate as a quantitative index of systemic rheumatoid activity. Other sedimentation methods, such as the Rourke-Ernstene and Westergren, deserve to be similarly evaluated.

Rheumatoid Spondylitis and Aortic Insufficiency. D. P. Schilder, W. P. Harvey and C. A. Hufnagel. New England J. Med. **255**:11-17 (July 5) 1956 [Boston].

The authors studied a large number of patients with aortic insufficiency who were being evaluated for surgical correction of this lesion. Rheumatoid spondylitis was present in 5 of the first 100 seen. These cases illustrate the association of rheumatoid spondylitis and aortic insufficiency and present some unusual features. The patients were remarkably similar in many respects. None had a history of syphilis. Only one had definite rheumatic fever, and one had peripheral rheumatoid arthritis. The heart disease and aortic insufficiency were severe; three patients died of it. All had free aortic insufficiency and hypertrophy of the left ventricle, and four had first-degree atrioventricular block. The rheumatoid spondylitis was advanced, and all patients were symptomatic with elevated sedimentation rates; two were anemic. There was an interval of many years between the onset of the spinal disease and clinical heart disease. Postmortem study in two patients showed aortic valves that were insufficient, thickened, and shortened, with fibrosis at the base but without commissural irregularity or obliteration. There was involvement of all layers of the aortic root, with intimal calcification in one patient. The mitral valves were normal, and no Aschoff bodies were discovered. It may be that rheumatoid spondylitis, a collagenous disease in the broad sense and closely allied to rheumatic fever and rheumatoid arthritis, occasionally causes heart disease with a predilection for the aortic valve, where it produces endocarditis and valvulitis. This would support the concept of a close relation between these diseases.

Changes in Concentration of Blood Lipids Following Prolonged Administration of Large Doses of Nicotinic Acid to Persons with Hypercholesterolemia: Preliminary Observations. W. B. Parsons Jr., R. W. P. Achor, K. G. Berge and others. Proc. Staff Meet. Mayo Clin. **31**:377-390 (June 27) 1956 [Rochester, Minn.]

Diets low in fat content, administration of desiccated thyroid, use of certain vegetable sterols such as sitosterol, and administration of large doses of estrogens have been used to correct abnormal lipid metabolism when it is found in association with clinical atherosclerosis. Each of these procedures has resulted in partial or complete correction of the disturbed lipid metabolism in some patients, but frequently the results have been disappointing. The search continues for a simple, safe, and effective method of correcting abnormalities of lipid metabolism, although admittedly there is no positive evidence that such therapy would prevent the development or arrest the progress of clinical atherosclerosis. Altschul and associates found that the concentration of serum cholesterol was reduced in normal and hypercholesterolemic individuals after ingestion of nicotinic acid. Previously the same investigators had noted a similar effect in rabbits when nicotinic acid was administered orally or parenterally. Interest in these results led the authors to study the long-term effects of large daily doses of nicotinic acid in patients with hypercholesterolemia.

Patients were selected for study if the pretreatment concentration of plasma cholesterol was consistently higher than 250 mg. per 100 cc. The nicotinic acid was initially administered in total daily doses of 3 gm. The schedule of medication was either one capsule (500 mg.) given six times daily or two capsules given three times daily. Treatment was continued at this dosage for at

least four weeks. In patients in whom the concentration of plasma chloesterol decreased to and remained at levels less than 250 mg. per 100 cc., the daily dose was reduced to 1.5 gm. In others, in whom the concentration of cholesterol failed to decrease significantly, the daily dose was increased to 4.5 gm., and in two patients to 6 gm.

The plasma cholesterol level decreased significantly in 9 of 13 patients observed for 12 weeks and in 3 of 5 other patients observed for 4 weeks. The beta-alpha$_1$ ratio was reduced in 11 of 13 patients observed for 12 weeks and in 4 of 5 other patients observed for 4 weeks. The concentration of total lipids in the plasma was reduced in most of the patients but to a lesser degree than was the concentration of cholesterol. Side-reactions, consisting of flushing and pruritus, tended to diminish rapidly after the first few days of treatment. Urticaria, nausea, and vomiting, which were observed in a few patients, subsided when the drug was withheld temporarily and did not recur when administration was resumed.

Recurrent Pulmonary Hemorrhage with Hemosiderosis: So-Called Idiopathic Pulmonary Hemosiderosis. A. J. Bruwer, R. L. J. Kennedy and J. E. Edwards. Am. J. Roentgenol. **76**:98-107 (July) 1956 [Springfield, Ill.].

To date, approximately 43 cases of a disease referred to as idiopathic pulmonary hemosiderosis have been described in the literature. The term "idiopathic pulmonary hemosiderosis" is unfortunate because it does not draw attention to the fact that it is the pulmonary hemorrhages that are idiopathic, whereas the cause of the hemosiderosis, that is, the bleeding, is known. The condition has been called "idiopathic pulmonary hemosiderosis" in order to distinguish it from the cardiac type of pulmonary hemosiderosis, which is usually attributable to mitral heart disease or chronic left ventricular failure. Other terms that have been used to describe idiopathic pulmonary hemosiderosis are essential brown induration of the lungs, hemolytic anemia with pulmonary hemosiderosis, essential pulmonary hemosiderosis, and Ceelin-Gellerstedt syndrome. The authors present the histories of three new patients with clinical symptoms consistent with those of patients having so-called idiopathic pulmonary hemosiderosis. The results of autopsy studies in two of these patients are presented.

The authors stress the fact that this is an entity with characteristic clinical, roentgenologic, and pathological features. The ratio of females to males in the reported cases is about 3:2. The patient's age at onset of the disease was 5 years or less in the majority of cases reported. The commonest manifestation is recurrent pulmonary hemorrhage leading to anemia and pulmonary hemosiderosis. Pulmonary fibrosis may also be present. The disease may be acute and the result fatal in a matter of months, or it may be insidious and of prolonged duration. The prognosis is usually poor, although recovery is not unkown. It is suggested that the underlying cause of the pulmonary hemorrhage may be a hypersensitivity.

Fibroelastosis in Adults: A Review of the Literature and Report of a Case. S. R. Guraieb and R. H. Rigdon. Am. Heart J. **52**:138-148 (July) 1956 [St. Louis].

Fibroelastosis (fetal endocarditis, endocardial fibrosis, congenital idiopathic hypertrophy of the heart, and congenital fibroelastosis) is a recognized pathological entity in infants, but few cases have been observed in adults. Data on the 24 cases of fibroelastosis in adults (16 years of age or over) found in a survey of the American and British literature are reviewed. The presenting clinical manifestations were those of myocardial failure in almost all of these patients. The authors report on a 38-year-old man who in 1953 had a generalized skin eruption that was diagnosed as "leukemia cutis" by biopsy. The eruption subsided after irradiation, but it later recurred. In January, 1955, the patient was hospitalized with the same type of skin eruption. A biopsy at this time showed a lymphomatous infiltration of the dermis that was considered to be a "malignant lymphoma." There was a similar lymphomatous infiltration of the bone marrow that was considered to be leukemia. He was treated with irradiation, Purinethol, and cortisone. Anemia, severe leukopenia, and thrombocytopenia developed four months before his death in May, 1955. Pathological studies revealed that the cardiac lesions were identical with those observed in infants. It is believed that even in adults the process is congenital. The histological findings in support of this opinion are the absence of any inflammatory reaction and the presence of elastic tissue and a thin band of cardiac muscle in the thickened endocardium.

The Prevention of Thromboembolic Complications in Myocardial Infarction by Anticoagulant Therapy: A Clinical-Pathologic Study. H. I. Glueck, H. W. Ryder and P. Wasserman. Circulation **13**:884-895 (June) 1956 [New York].

Autopsy records of 151 patients who died of myocardial infarction in a large private hospital were reviewed. Seventy-six patients received anticoagulant therapy, and 75 patients did not. Embolic phenomena were of common occurrence in patients dying of myocardial infarction. Clinically, these were often overlooked. The utilization of anticoagulant drugs reduced the incidence of embolic complications from 41% in the "untreated" series to 9% in the "adequately treated" group. The findings of the pathologist showed that the fatal emboli were reduced from 21% in the untreated group to 4% in the patients receiving adequate therapy. Inadequate, delayed, or poorly planned therapy afforded the patients no protection from this complication. Thrombophlebitis was markedly diminished in treated patients, and fewer mural thrombi were found in patients who received adequate therapy. Extension of the infarct or occurrence of a new infarct were not influenced by anticoagulant drugs.

Hemorrhage was not a significant cause of death in the present series. Rupture of the ventricle was noted to occur in both groups regardless of therapy. The patients could not be rigidly classified on admission to the hospital in regard to their eventual prognosis. This observation, plus the difficulty of diagnosis and the unpredictability of the disease, confirmed the inference that the decision to use anticoagulant therapy should not be dependent upon rigid diagnostic criteria for infarction. The benefit to be obtained from these drugs during the acute phase of illness can be ascribed to the prevention of thromboembolic complications. They are therefore indicated whenever thromboembolism is a threat.

The Mechanism of Cough Syncope. H. D. McIntosh, E. H. Estes and J. Warren. Am. Heart J. **52**:70-82 (July) 1956 [St. Louis].

The syndrome of cough syncope until recently was considered a rare form of fainting. Earlier investigators suggested that it was an epileptic equivalent or the result of a laryngeal reflex. Later, these theories were abandoned and a circulatory mechanism producing cerebral anoxia was accepted as an explanation. Twenty patients who had experienced cough syncope were questioned in detail regarding these episodes. Studies were undertaken on 13 of these patients to determine the effect on the cardiorespiratory system of single and paroxysmal coughs. The intrathoracic pressure was measured by an air-filled esophageal balloon. The systemic arterial pressure and the cerebrospinal fluid pressure were measured through indwelling needles. These pressures were recorded simultaneously by a suitable Statham strain gauge or a Sanborn electromanometer on a Sanborn four-channel direct-writing oscillograph. In some studies the "net" pressure, i. e., the arterial pressure minus the intrathoracic or spinal fluid pressure, was recorded by a Statham differential strain gauge. For comparison, similar studies were made on a heterogenous group of 100 patients with no history of cough syncope.

These studies suggest that syncope due to cough is the result of the transmission of markedly elevated intrathoracic and intra-abdominal pressure to the cerebrospinal fluid compartment causing an essentially equal rise of the latter pressure. This increased cerebrospinal fluid pressure, by increasing the extravascular pressure around the cranial arteries and veins, causes blood to be "squeezed" from the cranium. Thus, the brain becomes rapidly "bloodless," anoxia develops, and syncope may occur. The occurrence of cough syncope apparently depends on many variables. The magnitude and duration of the cough paroxysm, which depend possibly on the body build and the compliance of the pulmonary system, seem of primary importance. The facility with which blood may be "squeezed" from the cranial vessels is also of importance and apparently depends on the dynamic distensibility of the vascular system not subjected to an increased

extravascular pressure, the cardiac output, the total blood volume, and other, at present unknown, factors. The susceptibility of the cerebral cortex to anoxia will determine the duration of time that a "bloodless" brain must be maintained for syncope to occur. The results of this study are in agreement with other reports which suggest that cough syncope is a common form of fainting.

Cardiac Pain from Esophageal Lesions. G. Bourne. Lancet 1:892-893 (June 9) 1956 [London, England].

The first of the two patients presented was a 54-year-old man, who had a sudden attack of pain in the chest at the level of the upper part of the sternum, whence it radiated down the left arm and up into the neck. Later in the day he had another similar attack, and two days later he had several more. All were relieved by morphine. Although on his first admission the diagnosis was of coronary thrombosis, suspicion was aroused during the second admission by the normal electrocardiogram and by the normal size and shape of the heart. Because it had been noticed that from time to time he swallowed air, the esophagus became suspect, and on radiography a diverticulum of its middle third was found. The second patient, a 67-year-old man, had symptoms of angina of effort. The pain in the chest radiated to both sides, but not to the arms or to the neck. It was induced by hurrying and by climbing hills or stairs, and it was not associated with shortness of breath. It lasted two or three minutes. The electrocardiogram, after considerable exercise by the patient, remained normal in the standard leads. The esophagus showed a sliding hiatus hernia on roentgenography. These two histories are put on record to draw attention to the necessity for a full investigation of the esophagus when pain that clinically appears attributable to coronary disease is not associated with any other abnormality, whether clinical, electrocardiographic, or radiological. The esophageal condition should be treated by advice about the proper mastication of food, by a low-residue diet, by use of aluminum hydroxide or bismuth before meals and belladonna, and by having the head of the bed raised on 9-in. blocks. The complete disappearance of symptoms after such treatment would argue for an esophageal rather than a coronary origin.

An Evaluation of Twenty-Two Patients with Acute and Chronic Pulmonary Infection with Friedlander's Bacillus. B. M. Limson, M. J. Romansky and J. G. Shea. Ann. Int. Med. 44:1070-1081 (June) 1956 [Lancaster, Pa.].

The typical pulmonary lesion produced by Friedländer's bacillus (Klebsiella pneumoniae) is a fulminating lobar pneumonia noted for its high mortality rate. Before the use of antibiotics it was fatal in from 80 to 90% of those affected. The use of streptomycin, chlortetracycline, oxytetracycline, or chloramphenicol has altered its prognosis, but the disease still presents many difficulties in management. Respiratory infections caused by Friedländer's bacillus have been classified as follows: (1) acute Friedländer's pneumonias, (2) acute mixed infections or secondary infections, and (3) chronic respiratory infections. In the latter two, Friendländer's bacillus has been the predominant organism. Twenty-two patients have been observed during the last two years at the George Washington University and Georgetown University Divisions of the District of Columbia General Hospital; 13 had acute Friedländer's pneumonia and 9 had acute and chronic mixed pulmonary diseases. The patients, all but one of whom were males, ranged in age from 16 to 70, most of them being in the middle-aged group; 15 were alcoholics, and 5 of these were in delirium tremens on admission. Nine of the 13 patients with acute Friedländer's pneumonia died. Three of those who survived were only moderately ill. Two patients received tetracycline and recovered within a week. The third was severely ill and had delirium tremens on admission. He received penicillin initially; on the third day, when the diagnosis was established, the therapy was changed to administration of streptomycin and chlortetracycline, with very good results within a week. The fourth survivor, who had arrested apical pulmonary tuberculosis, became ill with lobar pneumonia five days before admission. He received erythromycin initially, but streptomycin and tetracycline were substituted on the third day. Later, treatment was with streptomycin and chloramphenicol, and he made a slow but complete recovery on this course of treatment. The nine patients who died were alcoholics, with four in delirium tremens, and all were severely ill. There were nine patients suffering from acute and chronic mixed pulmonary diseases, and only one of these died. Therapeutic failures in the treatment of severe infections are usually due to the virulence of the organism, the factor of lowered resistance, the lack of an agent effective against the micro-organism, or delay in therapy when an effective drug is available. This is especially true of Friedländer's pneumonia. The sulfonamides have been generally disappointing, and penicillin has not been effective. The mortality rate has been reduced since the introduction of streptomycin. Tetracycline and chloramphenicol have also been found effective, but the number of cases is too small to be the basis of an accurate statistical evaluation. Friedländer's pneumonia should be suspected in alcoholics showing evidence of severe pulmonary infection, and treatment directed against Friedländer's bacillus should be instituted without delay.

A Clinical Appraisal of Radioiodine Tests of Thyroid Function. W. M. McConahey, C. A. Owen Jr. and F. R. Keating Jr. J. Clin. Endocrinol. 16:724-734 (June) 1956 [Springfield, Ill.].

Tracer doses of radioiodine were given to 208 patients in whom various thyroid disorders had been diagnosed and to 181 euthyroid patients who served as controls. Ninety-two of the 208 patients had toxic diffuse goiter, 46 had adenomatous goiter without hyperthyroidism, 19 had adenomatous goiter with hyperthyroidism, 13 had myxedema, and 38 were initially suspected of having toxic diffuse goiter but were later judged to be euthyroid. Seven diagnostic laboratory procedures employing radioiodine were evaluated in terms of their economy, the time required, and the ease of administration and operation, as well as diagnostic precision. These were (1) percentage of the tracer dose collected by the thyroid in six hours; (2) percentage of the tracer dose collected by the thyroid in 24 hours; (3) percentage of radioiodine excreted in the urine in 24 hours; (4) the proportional rate of accumulation of radioiodine by the thyroid, as described by Keating and associates; (5) the proportional rate of disappearance of the isotope from the blood into all organs other than the kidneys, as described by Keating and associates; (6) proportion of radioactivity in serum that is organically bound 24 hours after a tracer dose, i. e., the conversion ratio, as described by Clark and associates; and (7) volume of plasma cleared of inorganic iodide by the thyroid per minute, i. e., thyroidal iodide clearance, as described by Berson and associates.

The most precise tests for the diagnosis of toxic diffuse goiter were the six-hour thyroidal-collection test, the thyroidal iodide clearance test, and the conversion ratio. The first test is the simplest and the most rapidly performed and requires the least radioactivity; consequently, it is best for the requirements of a routine radioiodine test. Only two tests, the 6-hour and the 24-hour thyroidal-collection test, were of value in the diagnosis of myxedema. None of the seven tests was decisive in determining whether a patient with a nodular goiter had or did not have hyperthyroidism.

Direct Measuring of the Portal Pressure. C. Arullani and L. Gabrielli. Policlinico (sez. prat.) 63:690-694 (May 14) 1956 (In Italian) [Rome, Italy].

The authors studied a method of measuring directly the blood pressure of the portal vein. Aspiration of material for biopsy and measuring of the portal pressure can be performed at the same time with a needle 15 cm. long and 0.2 mm. thick. Vitamin K may be given three days before the measurement to assure coagulation of the blood. The needle is introduced at the level of the trunk of the portal vein. The vein has been penetrated when there is a full flow of blood through the needle into the syringe. The syringe is then disconnected, and the needle is connected with the manometer. Except for patients with hypertension, the blood comes from the portal vein if the pressure is above 6 cm. H_2O. The blood is certainly not from the portal vein if the pressure is below 3 cm. The authors tried the method in 14 normal persons. Values below 3 cm. H_2O were obtained twice, between 4 and 6 cm. twice, and between 7 and 11 cm. 10 times. Fourteen patients with severe hepatitis and four with steatosis had pressure values between 6 and 12 cm. Twenty patients with mild hepatic sclerosis and with hypertension had

pressure values between 9 and 18 cm.: average 14.3 cm. Seventeen patients with atrophic cirrhosis of the liver had pressure values between 21 and 40 cm.: average 29.5. Difficulty in locating the portal vein, possibility of puncturing an artery, and difficulty in distinguishing between portal blood and suprahepatic blood are among the limitations of the method.

Retroperitoneal Hemorrhage Simulating an Acute Abdominal Lesion During Dicumarol Therapy. M. D. Reiter. West Virginia M. J. **52**:205-207 (July) 1956 [Charleston].

Reiter reports on three patients in whom acute abdominal symptoms developed in the course of treatment with bishydroxycoumarin (Dicumarol). There was a sudden onset of constant, nonradiating, nonrhythmic pain involving the flank, accompanied by ileus and followed by a fall in the number of circulating red blood cells and in the hemoglobin level. Two of the patients showed hypoactive peristalsis, muscle guarding, and leukocytosis; rebound tenderness was a prominent sign in the third. These are the classic signs and symptoms of retroperitoneal hemorrhage. The first two patients later showed ecchymosis, a symptom that lent further weight to the diagnosis. The recognition of retroperitoneal hemorrhage during Dicumarol therapy is important, especially when the primary disease is a recent myocardial infarction and unnecessary surgery must be avoided.

Some disturbing factors in these patients were the absence of cutaneous or urinary bleeding and a prothrombin time that, while not normal, was not strikingly abnormal. The diagnosis could not be proved by histological section, since the patients came to neither surgery nor autopsy. The author emphasizes that, so long as Dicumarol therapy remains popular in the treatment of myocardial infarction, retroperitoneal hemorrhage may develop in other patients, the more so since hemorrhage from hypoprothrombinemia has no predilection for a special portion of the body and since Dicumarol intoxication is admittedly common.

Treatment of Diabetics with BZ-55. S. Di Lorenzo and A. Miola. Riforma med. **70**:619-623 (June 2) 1956 (In Italian) [Naples, Italy].

Twenty-two diabetics were treated with BZ-55. Dosage was 2.5 gm. the first day, 1.5 gm. for the next 10 days, and 1 or 0.5 gm., depending on the patient, for the remaining days of treatment. Return to normal glycemia was noticed after 48 hours in some patients and after 6 to 10 days in others. BZ-55 was given after meals. There were no side-effects. Patients were from 42 to 72 years of age. Only four were below 45 years old. Insulin was withdrawn in 12 patients and satisfactorily replaced with BZ-55. The drug had no effect on the weight of the patients. Very good results were noticed in patients with mild disease. In only one patient was BZ-55 unable to replace insulin. The drug had no effect in a woman with a severe form of diabetes. The treatment lowered the blood sugar level and the diabetic hyperlipemia.

Viral Hepatitis: Descriptive Epidemiology Based on Morbidity and Mortality Statistics. I. L. Sherman and H. F. Eichenwald. Ann. Int. Med. **44**:1049-1069 (June) 1956 [Lancaster, Pa.].

Viral hepatitis is one of the most important communicable diseases in the United States. Two separate entities are included under this term: infectious hepatitis and serum hepatitis. They are each produced by distinctly different infectious agents. The history, prior to 1952, of viral hepatitis, which is now included under the heading of infectious hepatitis in the national morbidity statistics, is obscure. Records for deaths attributable to infectious hepatitis are available since 1949 in the latest revision of the International Lists of Diseases and Causes of Death; deaths ascribed to serum hepatitis are included in the broad category of deaths due to accidents, poisoning, and violence. Within this category they are contained in two general classifications: those due to postimmunization jaundice and hepatitis and those due to therapeutic misadventure in infusion or transfusion. During World War II the disease was a major problem among the Armed Forces. Outbreaks of serum hepatitis were associated with the use of certain lots of yellow fever vaccine containing human blood serum as a buffer. It is known to be a much more severe disease than infectious hepatitis, with an appreciable death risk. The number of reported cases of viral hepatitis, comprising infectious and serum hepatitis, has increased during the four years of the present study, with the peak incidence occurring in the late winter or early spring months in all regions of the United States. The seasonal low has consistently occurred during the summer, and this has also been observed in the Scandinavian countries and in England. This cyclic behavior emphasizes the epidemic nature of infectious hepatitis; seasonal distribution of the recorded deaths in the United States, however, shows little variation during the year, suggesting that deaths may be due mainly to serum hepatitis. A geographic classification of reported case data by state and region of the United States by year suggests that there has been an actual increase in the incidence of the disease, along with improvement in the reporting of cases. Such data as have been obtained on incidence by age and sex indicate that the highest incidence occurs in persons under 15 years and that both sexes are equally susceptible to the disease. The recorded death data show increasingly higher rates with increasing age, indicating that hepatitis is more severe in older age groups or that the incidence of serum hepatitis increases in these age groups. There is an excess of deaths in females in the age groups between menarche and menopause and an excess of deaths in males in the age groups over 50 years. The reasons for these differences are not apparent.

Blood Sugar Lowering Sulfonamide Derivatives. G. R. Constam, D. Bonhôte, H. Fellmann and others. Schweiz. med. Wchnschr. **86**:699-705 (June 16) 1956 (In German) [Basel, Switzerland].

Since November, 1955, carbutamide (Nadisan), a sulfonamide derivative, has been given orally to 60 women and 40 men with diabetes mellitus who were either treated ambulatorily at the Medical University Policlinic in Zurich or hospitalized in the Waid City Hospital in Zurich, Switzerland. Seventy of the 100 patients showed a good response to carbutamide; the remaining 30 responded unsatisfactorily or were therapeutic failures. The pancreas is possibly the point of attack by the sulfonamide derivative, which produces a drop in the blood sugar level. The mode and mechanism of action have not been elucidated. Blocking of the adrenals and of the glucagon present in the circulation can be definitely excluded. An inhibitory action exerted on the anterior pituitary does not seem likely. The effect of carbutamide may depend on the presence of endogenous insulin.

Carbutamide, designated BZ-55 by the German investigators, is suitable for the treatment of diabetes mellitus of less than five years' duration in sthenic patients over 45 years of age. The use of the drug is contraindicated in children, adolescents, and patients of asthenic type in whom the disease began before they reached the age of 45; in patients with acute complications, with precomatose or comatose conditions; in those with severe renal impairment; and in those with mild diabetes mellitus, who may obtain compensation with diet and exercises alone. Carbutamide may be given a trial in other patients with diabetes mellitus, and it is even indicated in patients of advanced age who are relatively resistant to insulin. The side-effects of carbutamide are mild and rare, but the occurrence of severe, fatal hypoglycemia and of uremia is possible. Consequently, carbutamide therapy should not be started without daily control of the blood sugar level. A change from insulin to carbutamide therapy requires hospitalization of patients who have previously been treated with insulin. Diet remains the basis for successful treatment with carbutamide. A diet poor in fats and relatively rich in carbohydrates (160 to 200 gm.) seems to provide favorable conditions for treatment with carbutamide. The possibility of late damage caused by carbutamide or gradual or sudden failure of the drug cannot be definitely excluded, since the patients have not yet been followed up for a sufficiently long period.

Steroid Therapy of Hypercalcemia and Renal Insufficiency in Sarcoidosis. R. W. Phillips and D. P. Fitzpatrick. New England J. Med. **254**:1216-1222 (June 28) 1956 [Boston].

The authors report the successful treatment by steroid therapy of hypercalcemia in two patients with sarcoidosis and point out subsequent improvement in renal function. The first patient, a 28-year-old man, was given 100 mg. of cortisone daily for 14 days. The serum calcium level promptly fell to normal within five days, skin lesions disappeared, the appetite returned, and the patient became asymptomatic. Hypercalcemia did not recur

during the two and a half years of follow-up study, although there was no further steroid medication. Renal insufficiency was present before treatment during the period of uncontrolled hypercalcemia. Improvement in renal function following cortisone therapy was minimal after three months, but at the end of two and a half years reversal of renal insufficiency had occurred, with return to nearly normal function. The second patient, a 48-year-old man, received 30 mg. of prednisone (Meticorten) daily for nine days and then 40 mg. daily for five days. The treatment failed to influence the elevated serum calcium level or the results of the urinary Sulkowitch test. Cortisone therapy (300 mg. daily for 11 days) was followed by a prompt fall of the abnormally high serum calcium levels to normal. Hypercalcemia did not recur during the 74 days of follow-up study, although there was no further steroid medication. This is admittedly not a prolonged period of observation; nevertheless, no immediate "rebound" occurred in the serum calcium level when cortisone was omitted. Renal function showed significant improvement within 45 days and had returned to nearly normal in 74 days.

The authors review data from other sources on correction of hypercalcemia in sarcoidosis with cortisone or corticotropin (ACTH) and call attention to the apparently uniform success. Maintenance steroid therapy does not appear routinely indicated, since relapse to abnormally high calcium levels does not necessarily occur. The amount of improvement in renal function with successful treatment of the hypercalcemic state was inversely proportional to the degree of renal impairment present. Little benefit was obtained in patients with advanced azotemia. Investigation of the status of calcium metabolism should be a routine procedure in all patients with sarcoidosis. If hypercalcemia is found, treatment with cortisone or corticotropin should be instituted. It is only by early use of these measures that renal insufficiency secondary to nephrocalcinosis can be prevented.

Pelger Anomaly: Pelger-Huet's Anomaly. E. Ó. Jóhannsson. Ugesk. læger **118**:583-588 (May 31) 1956 (In Danish) [Copenhagen, Denmark].

Pelger-Huet's anomaly is a familial anomaly with dominant inheritance and is independent of sex. It is known only by the blood picture. The typical changes in the blood picture make the anomaly easily recognizable, once it has been met with. The finding of the same blood picture in parents or children confirms the diagnosis. The hematological changes are characterized by inhibition of segmentation of the nuclei of both neutrophil and eosinophil granulocytes. There are about the same number of segmented and unsegmented nuclei among the neutrophil granulocytes. Most of the segmented nuclei have two segments, and only isolated nuclei have more segments. In Denmark and several other countries the anomaly was not described until recently, but it has long been well known in a number of countries. Cases in which the anomaly could not be established in the parents but was seen in the children are explained as recurrence of the gene by mutation. A case of Pelger's nuclear anomaly is reported in a patient in whom malignant lymphogranulomatosis was suspected. The anomaly was found in 5 of 13 members of the family, all of whom, except the patient, are well. There were no "Teilträger" (partial carriers).

The Treatment of Barbiturate Poisoning With or Without Analeptics. J. E. Eckenhoff and W. Dam. Am. J. Med. **20**:912-918 (June) 1956 [New York].

Data accumulated at the Copenhagen Narcotic Center show that supportive therapy alone is the method of choice in treating barbiturate poisoning. Mortality is strikingly low, and use of metrazol, picrotoxin, and other analeptics does not increase the survival rate and may even increase the death rate. Convulsions, vomiting with aspiration of gastric contents, and cardiac arrhythmias can be anticipated after the use of stimulant drugs. Analeptics may cause irreparable brain damage during anoxia by increasing cerebral oxygen demand in excess of available oxygen supply. The principles of supportive therapy are outlined, with emphasis on the importance of maintaining a patent airway. Comparison of treatment in two series of poisoned patients is difficult because of lack of standardization of basic treatment and inadequacy of criteria for classification of the severity of poisoning. A new method of treatment, hemodialysis, seems particularly promising, although sufficient data on its use have not appeared. The general problem is similar to that of treating a postanesthetic comatose patient, and it is suggested that a physician-anesthetist participate in the treatment of all cases of narcotic poisoning.

Sulfhemoglobinemia with Report of Case. E. Harsløf. Ugesk. læger **117**:551-553 (May 24) 1956 (In Danish) [Copenhagen, Denmark].

Severe sulfhemoglobinemia occurred in a patient who had been taking magnesium sulfate for 25 years. Since there had been no intake of substances forming methemoglobin, believed by most authors to be necessary for the formation of sulfhemoglobin, and since it is unlikely that magnesium sulfate alone can cause sulfhemoglobin, the case is presumably to be included under the so-called enterogenic cyanosis. In this condition, several cases of which have been reported, sulfhemoglobin is believed to be formed as the result of an intestinal disorder that causes the production of methemoglobin-forming substances in connection with hydrogen sulfide. The patient, who also had moderate anemia, together with reticulocytosis pointing to accelerated hematopoiesis, recovered after the magnesium sulfate was withdrawn and the intestinal function was regulated. Sulfhemoglobin is eliminated slowly, in the course of three or four months, in accordance with the normal breaking down of the erythrocytes, whereas methemoglobin disappears in a few hours or days.

Salt Loss in Chronic Renal Disease. A. E. Read. Brit. M. J. **1**:1399-1401 (June 16) 1956 [London, England].

Read reports on two patients with the "salt-losing syndrome." The syndrome in one of these patients was complicated by the appearance of a flaccid paralysis due to hyperkalemia. This responded dramatically to the intravenous administration of sodium chloride. The second patient was a woman aged 70, and in this patient the syndrome was accompanied by marked nitrogen retention. Despite this, the response to therapy with salt was most gratifying. The peripheral circulatory failure usually associated with severe sodium deficiency was absent in this case. Read stresses the importance of a thorough investigation of patients with "uremia." Analysis of blood and urine may reveal the presence of sodium depletion associated with excessive renal loss. The treatment of this aspect of the underlying renal condition is occasionally a life-saving measure. The ultimate prognosis depends on the severity of the primary lesion, usually a chronic pyelonephritis, but the salt-losing phase of the disease is very simply treated and may rescue the patient from what may appear to be a terminal phase of chronic renal failure.

SURGERY

Recent Ideas in Gastric Surgery. T. H. Somervell. J. Internat. Coll. Surgeons **25**:713-717 (June) 1956 [Chicago].

As a result of his experience with 6,000 patients operated on for duodenal ulcer, the author emphasizes the fact that the secretion of acid in a resting stomach or in response to a nervous stimulus, such as hunger, is to be considered entirely separately from the secretion of acid during the digestive period, which is not dependent on the vagi and is dependent on the hormone secreted by the pyloric antral mucosa. Consequently, the indiscriminate performance of vagotomy with gastrojejunostomy or some form of gastrectomy with a good free anastomosis in all cases of duodenal ulcer is to be deprecated. Highly acid fasting juice demands vagotomy. High acidity of the gastric juice in the course of the digestive period may be treated adequately by removal of the pyloric half of the stomach only. High acidity of the gastric juice throughout, i. e., in the resting phase and in the digestive phase, demands both vagotomy and hemigastrectomy. Since recurrences of ulcer after resection depend on the presence of intact vagi, and since recurrences after vagotomy depend on the presence of the antrum, the combination of gastric hemiresection with vagotomy must be reckoned as the standard operation for duodenal ulcer in patients with hyperacidity.

Coarctation of the Aorta Associated with Patent Ductus Arteriosus. J. C. Cooley, J. W. Kirklin, O. T. Clagett and others. Circulation 13:843-849 (June) 1956 [New York].

The records of 193 patients in whom coarctation of the aorta was treated surgically at the Mayo Clinic were reviewed. In 14 instances (7.3%) the ductus arteriosus was grossly patent. Since the combination of patent ductus arteriosus and coarctation of the aorta poses special anatomic, physiological, and surgical problems, observations on these 14 patients are discussed. The results of operation in the group of eight patients having a patent ductus arteriosus associated with coarctation of the aorta and no pulmonary hypertension were good in every case except for one postoperative death. Of the six patients having pulmonary hypertension, patent ductus, and coarctation of the aorta, two died in the postoperative period. Of the four patients surviving operation, three obtained good results, with adequate lowering of the systemic blood pressure. One patient, in whom the ductus was divided without repair of the coarctation, obtained only a fair result.

The authors emphasize the fact that it is important to recognize before operation those patients in whom a patent ductus arteriosus is associated with pulmonary hypertension. In those with severe pulmonary hypertension and attachment of the ductus in the region of the coarctation or distal to it, considerable amounts of the blood going into the descending aorta may be coming from the pulmonary artery. The collateral circulation is sometimes poorly developed under these circumstances. Then cross-clamping of the aorta for a period long enough to allow an aortic resection and anastomosis might cause paralysis of the lower limbs. This catastrophe did not occur in any of the patients in this series. The anastomosis should, however, be made as quickly as possible. Moderate hypothermia was utilized in one case. The fact should be considered in the postoperative management of these patients that high oxygen concentrations lower the pulmonary artery pressure in most persons with pulmonary hypertension associated with congenital heart disease. For this reason, the patient is kept under high oxygen concentrations for a prolonged period after operation, in some instances from 7 to 10 days. Though this maneuver is on an empiric basis, it may lower the pulmonary artery pressure enough to take some of the strain off the right ventricle during the critical period.

The Hemodynamic Results of Surgical Correction of Atrial Septal Defects: A Report of Thirty-Three Cases. J. W. Kirklin, W. H. Weidman, J. T. Burroughs and others. Circulation 13: 825-833 (June) 1956 [New York].

Kirklin and associates describe the results of operation in the first 33 of a total of 59 patients with atrial septal defect and left-to-right shunt, who were treated at the Mayo Clinic before Dec. 1, 1955. All 33 patients had atrial septal defects with left-to-right shunting of blood across the defect; many had additional complicating features. Some had a degree of right-to-left shunting, as well. Only four patients were entirely asymptomatic. Thirty-one of the 33 patients were operated on with the atrial-well technique of Gross and associates, with minor changes in details of suturing. A suitable piece of noncompressed Ivalon sponge was used to close the defects. The technique was modified for the patients with associated and complicated defect. Hemodynamic data were obtained before, during, and after the operation. The results of operative closure of atrial septal defects were excellent in 27 cases, fair in 4, and poor in one. There was one postoperative death. On the basis of these results, it seems justified to advise repair of atrial septal defects in all patients with significant physiological derangement resulting from this anatomic malformation. In the subsequent 26 cases, bringing the entire series to 59 cases, closures have all been judged to be complete.

Gross Damage to the Portal Vein and Hepatic Artery During Cholecystectomy. N. R. Wyndham. Australian & New Zealand J. Surg. 25:292-295 (May) 1956 [Melbourne, Australia].

Division of the portal vein with delayed repair occurred in a 34-year-old woman who was subjected to a cholecystectomy. After the operation an increasingly large amount of blood came from the drainage tube. By the next day it was obvious that intraperitoneal bleeding had also occurred. For six days after the operation her condition became gradually worse, although the pulse rate and temperature did not vary significantly. On the seventh day her deterioration became more obvious. Her complexion was sallow, with some icterus. Bile and albumen appeared in the urine. On the 11th day, operation was undertaken as a desperate measure because of a sudden deterioration in her condition. A large quantity of old blood was evacuated, about half consisting of clots. The common bile duct and the hepatic artery were intact, but the portal vein had been completely divided. The hepatic end had been ligated, but the distal end was occluded by a clot. This was friable and was removed with a probe and sucker to a distance of 2.5 in. (6.25 cm.). Only a small trickle of blood resulted. The hepatic end of the vein was cleared in a similar manner and the continuity restored with fine silk sutures. Two years after the operation, the patient was well and free of all symptoms referable to the biliary tract.

Ligation of the common hepatic artery has frequently been performed for portal hypertention as a deliberate procedure. The only liver disease in the case reported here was due to a chronic biliary obstruction. The patient was a 49-year-old woman in whom a stricture of the common hepatic duct was found at operation. This was excised and repaired over a T-tube, the long limb of which was introduced through an opening below the stricture. A somewhat abnormal relation of the structures around the common bile duct was seen, the portal vein lying anterior and the common hepatic artery being anterior to the common bile duct. The immediate postoperative course was normal. On the 20th postoperative day the patient complained of epigastric pain and vomited a few ounces of blood-stained fluid. A diagnosis of intra-abdominal bleeding was made. At operation (one month after the first one) it was found that the bleeding came from a large hole in the side of the hepatic artery, which had been eroded by the T-tube. Complete obliteration of the artery with slik sutures was required. The results of ligation of the hepatic artery were awaited with some trepidation. The semicomatose, intensely jaundiced appearance of the patient was thought to be due to acute liver failure. Recovery was much more rapid than expected. In what way compensation for the loss of blood supply from the hepatic artery occurred is not clear. Apparently, numerous small vessels had penetrated the liver substance from the surrounding connective tissue. New systemic vessels were obvious at the last operation (required because of stricture of the duct), but these could have played little part in the immediate recovery phase. There has been no demonstrable damage to the liver due to the ligation of the hepatic artery in this case.

Aspects of Bronchial Adenoma. F. Holle and R. Schautz. Arch. klin. Chir. 281:583-597 (No. 6) 1956 (In German) [Berlin, Germany].

The authors discovered 7 bronchial adenomas among 100 pulmonary tumors. The bronchial adenoma stands in fifth place, when the solitary pulmonary foci are classified according to frequency. Tuberculomas, bronchial carcinomas, hamartomas, and malignant metastases are more frequent. Bronchial adenoma usually begins at a relatively early age, but its growth is slow. The tumor is extremely vascular and usually has its origin in the larger bronchi. Although the central and perihilar sections of the bronchial tree are the main areas of localization, adenomas may also occur extrabronchially and in the peripheral sections of the lung. They grow either in the form of a pedicled, cylindrical polyp extending into the bronchial lumen or within the bronchial wall growing through it toward the lumen and outward. The pedicled endobronchial polyps lead to gradual obstruction of the bronchus, which is intermittent at first and later becomes permanent. The mural adenomas, which grow through and beyond the wall, destroy the bronchial wall and the cartilages, but they remain separated from the mucosa and alveolar parenchyma by a layer of capsular connective tissue. Patients with bronchial adenoma usually have a long history of illness. Five of the authors' seven patients had had symptoms for more than seven years.

Pleuropulmonary suppurations that recur for years and finally produce a pleural empyema are the most characteristic clinical manifestation of a bronchial adenoma. Coughing, asthma-like

attacks, increased amounts of sputum, and small hemorrhages occur as long as the bronchus remains patent. Hemorrhages are especially frequent with endobronchial adenoma. Progressive bronchial obstruction is accompanied by stenotic breathing, stasis of secretions, and chronic pneumonia, followed by retention atelectasis and pleural suppuration. Roentgenologic examination and bronchography are helpful in the diagnosis. Histologically, bronchial adenomas are of carcinoid or cylindroma type. Opinions are divided as to which of these two types has a greater tendency to malignant infiltration and the formation of metastases. Apparently the carcinoid type is the more frequent. Of the seven adenomas studied by the authors, five were of the carcinoid, one of the cylindroma, and one of the mixed type. Although endoscopic removal was formerly considered adequate, the authors are of the opinion that this treatment is sufficient only for patients of very advanced age or for those with other incapacitating diseases. In all other patients thoracotomy should be carried out. Roentgen irradiation is useless. Bronchotomy may prove adequate for the pedicled endobronchial growths. Radical extirpation by more or less extensive resection is the method of choice in the majority of patients. The authors performed one pneumonectomy, two bilobectomies, two lobectomies, one segmental resection, and one resection of the bronchus.

Relationship of Portal Hypertension to Ascites in Laennec's Cirrhosis. W. J. Eisenmenger and W. F. Nickel. Am. J. Med. **20**:879-889 (June) 1956 [New York].

The effect of portacaval anastomosis on the fluid and electrolyte balance of five selected patients with Laennec's cirrhosis and chronic ascites is reported. In these persons ascites disappeared after the shunt operation, although marked peripheral edema developed in several cases. These observations are presented in support of the importance of the role of portal hypertension in the formation of ascites in Laennec's cirrhosis. They give support to the concept that the various mechanisms that account for abnormal retention of sodium and water by the kidney are secondary rather than primary to the accumulation of ascites. Portacaval anastomosis is not advocated as a general method of treating chronic ascites, although it may be beneficial in some patients. In two additional patients, ascites made its first appearance shortly after protacaval anastomosis was established. Individual variation in quantity of hepatic lymph is postulated as the cause of ascites in those two patients. The formation of ascitic fluid in experimental animals in which hepatic venous pressure is elevated is also discussed. These results are considered to apply to the formation of ascites in certain clinical conditions but not necessarily Laennec's cirrhosis.

Cancer Developed in Burn Scars: Clinical Study of 23 Cases. A. Prudente, J. Baptista da Silva Neto, A. Abrão and A. P. Mirra. Rev. Assoc. med. brasil. **2**:227-236 (May) 1956 (In Portuguese) [São Paulo, Brazil].

Twenty-five patients with cancer developed in burn scars were observed. The majority of the patients were between the ages of 40 and 60 years. The age of the patients when the burns occurred varied between 1 and 30 years. The average time elapsed between the occurrence of the burn and the development of cancer was 34½ years. In the majority of the cases the burn had occurred on the trunk; it occurred less often on the extremities and rarely on the head. The burns were caused by fire or by boiling water in most cases and by roentgen rays in one. Most of the patients were men. The type of cancer histologically found was epidermoid carcinoma. One of the patients had two independent tumors on the same scar. Distal metastases occurred in two cases. One was an anaplastic carcinoma. The treatment was surgical in 19 patients. The operations varied from resection of the tumor, followed by application of a graft or roentgen therapy, to amputation of the involved structure. Four patients died, one postoperatively and three between two months and four years after the operation. One patient had inoperable metastases 15 months after the operation. Two patients disappeared from observation and 12 patients survived, 5 for less than a year, 5 for nearly two years, and 2 for more than five years.

Intestinal Obstruction Due to a Phytobezoar in a Female Aged 79 Years. I. S. Epstein. Australian & New Zealand J. Surg. **25**:307-309 (May) 1956 [Melbourne, Australia].

The commonest complications from bezoars are gastric ulceration and intestinal obstruction. The second is more common with phytobezoars (consisting of vegetable substances), because they are smaller than trichobezoars and can pass into the small intestine more readily. The occurrence of such a phenomenon in an octogenarian woman under treatment for myocardial infarction is described. The symptoms of this patient were remarkable because of the absence of pain, which is generally accepted as a necessary feature for a diagnosis of mechanical obstruction of the small intestine. To direct questioning concerning pain the patient's only reply was a complaint of abdominal discomfort associated with nausea and aggravated by vomiting. Consequently, the vomiting and abdominal distention were originally ascribed to either disordered intestinal function secondary to electrolyte disturbance or mesenteric vascular thrombosis. Serum electrolyte estimations revealed a lowering of sodium and chloride concentrations and a blood urea level of 115 mg. per 100 cc. These changes were considered to be subsequent to and not causative of the intestinal condition. Radiography confirmed progressive dilation of loops of small intestine. Laparotomy was indicated because of the possibility of a removable mechanical factor causing partial obstruction of the small intestine.

At laparotomy, a phytobezoar impacted in the jejunum was easily removed. This bezoar consisted predominantly of undigested tomato skins, and it was later discovered that the patient had consumed several raw, unskinned tomatoes while in hospital. The author points out that the ingestion of persimmons often leads to the formation of bezoars.

Congenital Aganglionic Megacolon. D. M. Hays and W. J. Norris. California Med. **84**:403-406 (June) 1956 [San Francisco].

The present concept of the cause of congenital aganglionic megacolon (Hirschsprung's disease) is the result of the widespread acceptance of the experimental and clinical studies of Swenson and co-workers. This concept assumes the presence of an area of colon (usually rectosigmoid) in which the ganglion cells of the myenteric plexus are congenitally absent, resulting in a lack of coordinated peristaltic activity. The dilation and hypertrophy of the proximal colon are compensatory phenomena. Swenson applied to this problem a procedure consisting of coloproctectomy with reconstruction of the alimentary tract by a "pull-through." In the Los Angeles Children's Hospital, 21 pull-through operations for congenital aganglionic megacolon have been carried out since 1949. In 14 patients the Swenson procedure as modified by Hiatt was employed, with perineal excision of the colon segment. There were four postoperative deaths and three symptomatic recurrences in this group. Three patients were treated by transabdominal resection of colon and rectum with subsequent pull-through reconstruction. Anterior resection was carried out in two cases. Three children with recurrence of symptoms after primary operation were subjected to a secondary pull-through procedure with a successful outcome. Since the postoperative deaths involved mostly infants less than 6 months old, the authors studied congenital aganglionic megacolon in 31 young infants. They found it is extremely difficult to establish a diagnosis in this age group even at exploratory laparotomy. The mortality rate was high in these infants, regardless of the form of therapy. Colostomy appeared to be indicated when a conservative regimen failed to control intractable colonic obstruction during the first year of life.

Hypophysectomy in Diabetes Mellitus with Vascular Complications. R. Luft, H. Olivecrona, D. Ikkos and others. Nord. med. **55**:715-719 (May 24) 1956 (In Swedish) [Stockholm, Sweden].

Up to July, 1955, hypophysectomy was performed in 20 cases of juvenile diabetes in order to check the progress of the vascular complications. The patients were aged 20 to 33; all had advanced diabetic retinopathy, in several cases the blood pressure was increased, and there was renal injury of various degrees. Two deaths occurred postoperatively, and five patients died from 1 to 19 months after the operation, three of these in progression of the disease, 6, 15, and 19 months, respectively, after operation. The

survivors have been followed for from 3 to 43 months. Substitution medicaments included, besides insulin, thyroxin, adrenocortical hormone, and also in some cases androgenic and estrogenic hormone. The blood pressure and the heart volume decreased. The glomerular filtration rate was lessened, while the renal plasma flow remained unchanged. The albuminuria was reduced. The vascular calcifications present before the operation were not affected, but new calcifications were not demonstrable after the operation. The material does not allow conclusions as to possible improvement in the renal condition. In some cases the visual capacity improved. Progress of the diabetic retinopathy was demonstrable in only one instance. The results so far are encouraging.

NEUROLOGY & PSYCHIATRY

Electroencephalography in Cerebral Apoplexy. B. Harvard and E. Skinhøj. Nord. med. **55**:679-681 (May 17) 1956 (In Danish) [Stockholm, Sweden].

In the neurological department of Frederiksberg Hospital, routine electroencephalographic examination was carried out during the last two or three years in practically all patients with cerebral apoplexy as soon as the clinical condition allowed. Of the 147 patients examined, 14 showed certain signs of cerebral hemorrhage. In 54, cerebral thrombosis was probable; in 7, with heart disease complicated with perpetual arrhythmia, embolic apoplexy was likely; in 24, apoplexy was regarded as a crisis in an already present encephalopathy, arteriosclerotic or hypertensive; and in 48 differential diagnosis was not possible. In the main, no encephalographic picture was found to be specific for cerebral apoplexy; the focal and diffuse abnormalities resembled those found in other forms of brain disorder. The rare occurrence of spike activity is thought to indicate that the lesions are most often subcortical. There was a close connection between the electroencephalographic findings and the clinical condition and also the psychic condition after the acute insult was past.

Thirty-two of the 38 patients with marked delta focus and only 15 of the 53 with normal electroencephalograms were gravely affected psychically. The paralyses showed good remission in 6 of the patients with marked delta focus and in 33 of those with normal electroencephalogram. Patients with hemorrhages usually have severe focal abnormalities, as do those with embolism, while patients with thrombosis present only slight focal abnormalities or fully normal records. Electroencephalography can afford considerable help in the differential diagnosis between the different forms of apoplexy, but it is stressed that the examination of these patients, who are often exhausted, presents technical difficulties and a probably not negligible trauma for the patients. The examination is especially indicated for the patients for whom anticoagulant therapy is most desirable, i. e., patients whose prognosis for life is good but who, because of the extent of the paralyses, will be forced to lead a sedentary life for a long time. Here the attempt should be made before the start of anticoagulant therapy to make sure that there is no intracranial hemorrhage.

Cardiopathies, Electroshock, and Succinylcholine. M. Porot and E. Bisquerra. Presse méd. **64**:1101 (June 16) 1956 (In French) [Paris, France].

Eleven psychiatric patients affected by more severe cardiopathies than those related to neurovegetative disorders or to hypertension without heart decompensation were treated by electroshock and did not suffer cardiac complications from it. Most of these patients, affected with valvular, permanently arrhythmic, or coronary heart disease, were treated by cardiotonics and vascodilators during electroshock. After light anesthesia and before electroshock, seven of them were given from 60 to 100 mg. of iodide of succinylcholine (celocurine), a curarizing preparation. These patients thus had the advantages of no preliminary spasm, considerable diminution of histamine liberation, only brief anoxia (as a result of artificial oxygenation), and, most important, great reduction of the muscular effort, that is the motor crisis of electroshock without curarization. Less aggressive psychiatric therapeutics should be tried on cardiac patients before electroshock. However, each case must be studied individually to see if the continued acute mental condition and psychiatric risk (especially suicide) that may be caused by not using electroshock are more serious than the risk of cardiac complications subsequent to electroshock. Since the latter risk is notably reduced by the use of the method of anesthesia and curarization with succinylcholine, cardiac contraindications for electroshock have become the exception.

Electroencephalography in Unilateral Subdural Hematoma in Adults. A. Lundervold and R. Nordlie. Nord. med. **55**:681-686 (May 17) 1956 (In Norwegian) [Stockholm, Sweden].

The most typical electroencephalographic findings in chronic subdural hematoma is a focal reduction of voltage in the normal activity together with a maximum of slow waves over the hematoma. Less often the electroencephalogram can either show a reduction of the voltage or only focal slow waves. In exceptional cases, the maximum of pathological activity will be on the contralateral side, but in these cases the bilaterally synchronous waves are reduced over the hematoma, and correct focal diagnosis can also be made in these more difficult cases. Although the electroencephalogram is relatively typical in subdural hematoma, the findings are by no means pathognomic; other intracranial disorders can at times show a similar picture. The examination can, however, be of decisive significance both in diagnosis and perhaps particularly for localization of the pathological process in cases in which a subdural hematoma is suspected. For this reason and because the examination is painless, routine electroencephalography is carried out in the Rikshospital in all patients with suspected hematoma. Postoperative examination is made to determine whether the pathological activity persists. This is important in prognosis, perhaps especially so in the cases in which the clinical examination shows normal conditions. Electroencephalography can play an important part in connection with the clinical findings and possibly those of other supplementary examinations. Cooperation between the neurosurgical and the neurophysical departments is important.

GYNECOLOGY & OBSTETRICS

Anesthesia for Cesarean Sections at the University Women's Clinic in Jena. E. Rimbach. München. med. Wchnschr. **98**:816-819 (June 8) 1956 (In German) [Munich, Germany].

The author describes experiences with anesthetic methods in 100 women subjected to abdominal cesarean section. In 50 of these peridural anesthesia was used and in the other 50 general anesthesia was employed (in 43 ethyl chloride anesthesia was used, and in 7 anesthesia was begun with hexobarbital [Evipal]). The peridural anesthesia caused no complications in either the mothers or the infants. General anesthesia was followed by asphyxia in a considerable number of infants. Four infants died within a few hours after delivery, most likely as the result of the general anesthesia; three of these four fatalities involved prematurely born infants. The author believes that general anesthesia is too dangerous in premature deliveries. It should be replaced by peridural anesthesia, which is induced by means of 50 mg. of tetracaine hydrochloride (Medicain).

Embolism by Amniotic Fluid. R. Garneau, J. Francoeur and F. Shooner, Laval méd. **21**:793-808 (June) 1956 (In French) [Quebec, Canada].

The authors report a fatal pulmonary embolism by amniotic fluid in a 41-year-old multigravida. Her clinical symptomatology pointed to this hypothesis, confirmed five hours later by an autopsy. Noteworthy points are the highly pathological obstetric history of the patient (five miscarriages) and the dramatic character of the termination of her fifth pregnancy. This miscarriage was accompanied by abundant hemorrhage with slow formation of the coagulum, by mydriasis, and by vomiting, which might have indicated an attenuated form of amniotic fluid embolism. The sixth pregnancy was terminated at eight and one-half months, when the patient died suddenly of an amniotic fluid embolism in spite of endotrachael intubation and cardiac mas-

sage. At autopsy, a great quantity of small whitish clots (squamous debris and scaled-off pavement cells) were found in the blackish-red and uncoagulated blood of the pulmonary artery and in the right side of the heart. They were identified as debris of the amniotic liquid. Histological examination of the lungs revealed areas of atelectasis with acidophilic serous effusion and dust cells in some alveoli. In all the sections, a great number of arterioles and interalveolar capillaries contained granular debris and some lanugo. Some of these vessels were literally obliterated by masses of scales. These findings established the diagnosis of pulmonary embolism by amniotic fluid.

Intrafollicular Ovarian Pregnancy. M. L. Bobrow and L. B. Winkelstein. Am. J. Surg. **91**:991-998 (June) 1956 [New York].

The case reported is the first proved instance of a primary intrafollicular ovarian pregnancy occurring at the Harlem Hospital among 587 patients operated on for ruptured ectopic pregnancy during the year 1943 to 1953. The patient was a 36-year-old Negro woman who had had three previous deliveries. A diagnosis of a ruptured ectopic gestation was made on the basis of the physical findings. Approximately 1,000 cc. of old and fresh fluid blood, together with large blood clots, was seen when the peritoneal cavity was opened. Exploration of the pelvis revealed a large mass, 20 by 15 cm., that was suspended from the uterus by the ligament of the ovary. The left tube and the ovarian mass were removed. The postoperative course was uneventful. Anemia resulting from loss of blood was corrected by transfusion. The extirpated specimen consisted of a soft cystic mass, measuring 12 by 6 by 7 cm., presenting on one surface a fallopian tube bound down by dense adhesions but anatomically separated from the cystic mass. Sectioning of the gross specimen revealed several cystic cavities, one of which was lined by a smooth shiny membrane; on its floor there was a large mass that appeared to be the maternal surface of a placenta. Further examination revealed amniotic fluid and a placenta with its membranes and cord that was attached to a fetus measuring 10 cm. from crown to rump. Microscopic examination showed infiltration of the corpus luteum by trophoblastic elements of the placenta from within the cavity of the corpus luteum itself. Examination of the cornual end of the tube showed the lumen to be obliterated as the result of chronic salpingitis. The final diagnosis was intrafollicular ovarian pregnancy and chronic salpingitis.

A review of the literature revealed 154 cases of true primary ovarian pregnancies. The final diagnosis of intrafollicular pregnancy rests with the operative and pathological findings. The causation of ovarian pregnancy is attributed to changes in the genital tract occurring as the result of pelvic infection. Proof of transmigration of the spermatozoa through the peritoneal cavity and ovarian maturation of the egg is demonstrated in the case described.

Amniotic Fluid Embolism as Cause of Death During and After Delivery. I. Martin. Geburtsh. u. Frauenh. **16**:463-472 (June) 1956 (In German) [Stuttgart, Germany].

A 43-year-old woman was hospitalized for her fourth delivery. The course of the delivery seemed to be normal until she suddenly (about nine and one-half hours after onset of labor pains) complained of dyspnea and dizziness, became restless, and lost consciousness. In view of the increasing cyanosis of the mother, delivery was completed by forceps. Dyspnea and cyanosis continued after delivery, and the mother died despite all therapeutic measures. Autopsy revealed a patent foramen ovale. Compression of the cut surfaces of the lungs yielded granular particulate matter of yellowish color. The tentative diagnosis of embolism by amniotic fluid was confirmed by microscopic examination, which revealed the presence of elements characteristic of amniotic fluid in the lungs, heart muscle, and kidneys.

The author found 57 cases of amniotic fluid embolism reported in the literature. Rupture of the bag of waters seems to play an important part in its causation, because only after this occurs can amniotic fluid enter the maternal blood stream. Apparently, not every amniotic fluid embolism is fatal. Clinically, the diagnosis can only be suspected, and even at autopsy there is no macroscopic finding that corroborates this diagnosis; microscopic studies are generally necessary. A number of possible pathogenetic factors are mentioned. Embolism by amniotic fluid may escape detection because of the lack of characteristic symptoms. To obtain more information about its incidence, microscopic examination of the lungs should be carried out in every maternal fatality that occurs during or immediately after delivery. If the foramen ovale is found to be patent, the other vital organs should likewise be examined for the presence of the constituents of amniotic fluid.

PEDIATRICS

The Evolution of Infant Feeding and the Advantages and Disadvantages of Soured Milk Mixtures. W. B. Blue and W. C. Davison. Postgrad. Med. **20**:41-48 (July) 1956 [Minneapolis].

The authors review the evolution of infant feeding and comment on the high mortality of artificially fed infants before the era of pasteurization, the numerous efforts to modify cow's milk, and the large number of proprietary infant foods available today. Particular attention is given to the work of Marriott, who simplified infant feeding by selecting soured whole milk or whole buttermilk (not the usual skimmed or fat-free commercial buttermilk) as a safe and digestible infant food. Marriott's original reason for using soured milk was that it diminished the work of digestion. Later, he suggested that its bactericidal action made it safer. A review of the various methods of feeding full-term and premature infants, both those who were normal and those who were ill and could not be breast-fed, led the authors to the use of evaporated milk soured with lactic acid at Duke Hospital of Durham, N. C. Lactic-acid evaporated milk can easily be prepared in the home from canned milk and it has many advantages.

Infants thrive on lactic-acid milk as well as they do on breast milk. Lactic-acid evaporated milk contains sufficient protein and calcium, but every child who is less than 3 years old should be given vitamins C and D. The milk is safe, because the evaporation process removes the risk of brucellosis, tuberculosis, typhoid fever, and other diseases that can be spread through dairies. The modification of the milk proteins by the evaporation process and acidification is also helpful for allergic infants. The addition of lactic acid prevents the growth of organisms that cause dysentery and of species of Salmonella with which flies or fingers may contaminate milk. Methemoglobinemia due to nitrate-containing well water does not occur in infants fed lactic-acid milk mixtures; this is a valuable asset in rural areas. The composition and quality of evaporated milk are much more constant than those of dairy milk. The cost of lactic-acid evaporated milk is half that of dairy milk or of many other infant foods. A disadvantage of lactic-acid milk is that concentrated lactic acid is poisonous, but using vinegar instead of lactic acid overcomes this difficulty. Some infants, especially those who previously have been fed with very sweet mixtures, dislike lactic-acid evaporated milk, but this difficulty can be overcome. All infants should be breast fed, not because human milk is necessarily better than other infant feeding mixtures but because it creates a sense of security and is of psychological advantage to the infants. When breast feeding is impossible, lactic-acid evaporated milk or vinegar evaporated milk is the best formula for infants.

The Effects of ACTH Given Intradermally to Infants with Hypertrophy of the Thymus. G. Zarbin and V. Baldi. Minerva pediat. **8**:761-764 (June 2) 1956 (In Italian) [Turin, Italy].

Nine infants 3 to 16 months of age with hypertrophy of the thymus were treated for seven days with microdoses of corticotropin (ACTH). All except one were eutrophic. The characteristic symptoms presented were dyspnea, cyanosis, and postprandial vomiting. One child suffered a mild convulsive syndrome a few hours before admission to the hospital. Two had bronchitis and were given antibiotics before treatment with corticotropin. Radiological examination was made before and on the fourth and seventh days after the treatment. The clinical results differed from the radiological results. Symptoms disappeared in eight children after the treatment. Radiological observation showed that the size of the thymus had decreased in only three. Corticotropin was well tolerated. In some children the

drug caused frequency of the bowels. The Thorn test was positive in five patients. In only two of these, the corticotropin therapy had reduced the hypertrophy of the thymus. The authors believe that intradermal administration of corticotropin in infants with hypertrophy of the thymus is of no particular value as far as reducing its size is concerned. Coritcotropin had only a general stimulating effect.

Considerations on the Use of Chlorpromazine in the Prophylaxis and in the Therapy of Transfusional Reactions. A. Coletta and F. Iafusco. Pediatria **64**:236-244 (April) 1956 (In Italian) [Naples, Italy].

The authors studied the effect of chlorpromazine on a post-transfusional reaction syndrome characterized by shivering and hyperthermia. The syndrome is caused by the pyrogenic or the allergic effect of the transfused blood. It is centered in the neuro-vegetative system. Chlorpromazine in a therapeutic dose of from 1 to 3 mg. per kilogram of body weight per day does not have any significant side-effect. The effect of the drug was studied in 25 children from 4 months to 10 years of age. They had dystrophic syndromes or different types of anemia. The quantity of blood transfused was from 50 to 200 cc. Twenty children suffered the classic symptoms of the syndrome. Ten minutes or more after the transfusion they started shivering and trembling, became pale, had cyanosis and headache, and vomited. Temperatures rose suddenly to 102 and 104 F (38 and 40 C). Two children had some hypotension. Five children had intense pruritus followed by an eruption on the skin. A dose of 4 mg. per kilogram of body weight per day was given. The symptoms were checked soon after the first intake of the drug. The temperature became normal in about one hour. The drug caused drowsiness and perspiration. Breathing became less frequent and deeper. The prophylactic effect of the drug was studied in 30 children who had previously suffered transfusional combined with allergic reactions. A dose of 4 to 8 mg. was given to 20 children half an hour before the transfusion. The other 10 children were kept as a control group and did not receive the drug. Two children in the experimental group had mild and short post-transfusional reactions. Seven children in the control group suffered the classic effect of the post-transfusion reaction syndrome.

DERMATOLOGY

Contact Sensitivity to Inappreciable Exposures. F. C. Combes and G. E. Morris. Indust. Med. **25**:289-290 (June) 1956 [Chicago].

This paper emphasizes the limited exposure that induces in some patients a recurrence of an eruption due to allergens to which they have been previously sensitized. The first of the patients had been employed by a manufacturer of antibiotics for nine months when a dermatitis of her hands, wrists, forearms, and face, for which she was hospitalized, developed. As the dermatitis was attributed to contact with penicillin, her job when she returned to work was restricted to packing sealed ampuls. Nevertheless, she experienced a recurrence almost immediately, and it became necessary to discontinue all contact with penicillin. Subsequently, however, she experienced recurrences of urticaria or dermatitis when she only shared a room with a patient who received an injection of penicillin or when she used the same toilet as a person who had recently had an injection of penicillin. She could not even walk past the plant manufacturing antibiotics where she had formerly worked without having a recurrence of urticaria. A second patient, who had also become sensitized to penicillin while working in the production of antibiotics, experienced a recurrence of conjunctivitis and periorbital dermatitis after working next to a girl who was sucking a penicillin lozenge.

Another case of extreme sensitivity concerned a man in whom a contact dermatitis had developed after working with naphtha; later the eruption recurred merely from entering a building where solvent fumes were present. Another man, who had become sensitized to phenol formaldehyde resins, had a recurrence of a vesiculoerythematous eruption after he talked to his co-workers, who had the fumes on their clothing. In a boy with a history of atopic dermatitis, the odor of lobster caused swelling of eyes and face.

THERAPEUTICS

The Effect of BZ-55 on Biochemically Uncontrolled Diabetes Without Insulin Treatment. B. S. Leibel. Canad. M. A. J. **74**:979-982 (June 15) 1956 [Toronto].

A series of clinical trials with BZ-55 is presented. The five diabetic patients selected were those who might be presumed to have enough endogenous insulin to preserve clinical stability in the presence of protracted and abnormal biochemical findings. The method of investigation consisted of a comparison of blood sugar levels before and after BZ-55 therapy was instituted. Although their diseases were clinically similar, only three of the five patients responded to therapy. Maximum benefit from BZ-55 may be delayed for longer than two weeks.

Experience with Reserpine in the Treatment of Alcoholism. N. S. Ritter. Quart. J. Stud. Alcohol **17**:195-197 (June) 1956 [New Haven, Conn.]

The present study was not concerned with the effect of the alkaloid reserpine on the acute alcoholic state but rather on the patients' drinking behavior over a period of time. The aim was to discover whether or not the drug exerted any specific action on psychological mechanisms operative in alcoholics. The patients were referred to the clinic by the magistrates of the home term court in New York City. Each patient was seen one evening per week by the internist assigned to the clinic. The patient was asked how he felt, if he was taking the prescribed medicament, and how many drinks he would estimate he had had during the preceding week. The only objective physical evaluation made was a blood presure reading. The patient was given a week's supply of medicament. Patients were randomly selected and given either reserpine or a placebo. Among 180 alcoholics studied during a one-year period, the effect of reserpine could be compared in 39 with the effect of a placebo in 36 controls. Although a sizable majority of both groups of patients seemed to improve, no decided difference between them was discernible. Both groups seemed to do better than before the start of therapy. During the past two years other forms of oral therapy have been used for similar patients, and the impression was that the fact that the patient is seen weekly and has some personal interest taken in his condition and that there is some form or oral therapy—be it with vitamins, a placebo, or reserpine—helps patients to cut down considerably on their drinking.

Synergism Between Meperidine (Demerol®) and Scorpion Venom. H. L. Stahnke. Arizona Med. **13**:225-227 (June) 1956 [Phoenix, Arizona].

Physicians who have had experience with patients who have sustained scorpion stings have noted an increase in convulsive activity after the administration of morphine. Death in some of these cases should not be attributed to the scorpion venom alone but rather to the combined action of these agents. When similar reactions were reported following the use of meperidine (Demerol), the author made a pilot test of this combination, the results of which suggested a synergistic effect between meperidine and the venom of the scorpion, Centruroides sculpturatus. Experiments on rats revealed that, whereas the median lethal dose of C. sculpturatus venom alone is 0.96 mg. per kilogram of body weight in the rat, the median lethal dose of the venom drops to 0.714 mg. per kilogram when 50 mg. per kilogram of meperidine is administered, and when 100 mg. per kilogram of meperidine is administered the median lethal dose drops to 0.387 mg. per kilogram. This venom, as well as that of the rattlesnake (crotalus), is a neurotoxin, and neither morphine nor meperidine would be desirable analgesic agents for patients who have been poisoned with such toxins, at least

not during the first 24 hours after the venenation. Consequently, the use of these analgesics is also inadvisable whenever a patient has suffered a venomous sting or bite and the offending animal has not been identified.

The Use of Aramine in Clinical Shock. G. H. Stechel, S. I. Fishman, G. Schwartz and others. Circulation 13:834-836 (June) 1956 [New York].

The use of metaraminol bitartrate (Aramine), a sympathomimetic amine [levo-1-(m-hydroxyphenyl)-2-amino-propanol] in normal subjects in 1954 had indicated the effectiveness of this drug as a vasopressor agent and had suggested certain advantages over other commonly used vasopressors. Aramine has now been used in 250 patients with clinical shock admitted to the first division medical service, Kings County Hospital Center, Brooklyn, N. Y. A group of 42 patients studied included a high percentage of poor-risk patients. It was found that, with administration of 300 mg. of the drug per 1,000 ml. of 5% dextrose in water, a rise in blood pressure to adequate levels could be anticipated within five minutes. Lack of response within 10 minutes usually indicated complete failure of vasopressor therapy. In many instances, therapy with Aramine was maintained for long periods of time (24 days in one case). It was noted that, after withdrawal of Aramine, the blood pressure gradually fell to levels that caused some alarm, and it seemed advisable to readminister Aramine immediately. It was found, however, that reinstitution of therapy was unnecessary in most instances, for the blood pressure gradually became readjusted to the withdrawal of the pressor agent over a period of hours. Advantages of Aramine over other pressor agents in the pilot study were verified in the present study, and several new advantages were noted, such as the fact that the blood pressure rose rapidly to the desired level, but not to the excessive levels so often observed with other pressor agents. When Aramine was withdrawn, the fall in pressure was a gradual one over a period of from 10 to 15 minutes, as contrasted with the precipitous drop in pressure often seen on withdrawal of other pressor amines. This characteristic is of particular advantage in cases where extended therapy is necessary. In no instance was there any deleterious result from infiltration of the tissues by infusion fluid containing Aramine.

PATHOLOGY

Amino-Aciduria in the Megaloblastic Anaemias. K. J. Keeley and W. M. Politzer. J. Clin. Path. 9:142-143 (May) 1956 [London, England].

Keeley and Politzer examined the urine of seven African women who were hospitalized with proved megaloblastic (but not pernicious) anemia before treatment was started. One-dimensional chromatography on urine specimens obtained in the morning showed normal amounts of amino acids. The control specimen of urine from a European patient with untreated pernicious anemia showed an excess of amino acids. The authors suggest that urinary chromatography be used to differentiate Addisonian from other megaloblastic anemias.

The Blood Pyruvic Acid Level in Renal Diseases and in Uraemic Coma. J. Kleeberg and S. Gitelson. J. Clin. Path. 9:148-152 (May) 1956 [London, England].

Sixty patients were examined with the aim of ascertaining whether pure renal diseases alter the normal blood pyruvic acid level; whether kidney diseases change the known response of the blood pyruvic acid level in other disorders; whether the blood pyruvic acid level in patients with uremic coma is different from that in patients with other kinds of coma who do not exhibit signs of renal failure; and whether hypertension, which is present in the majority of patients with nephritis, influences the blood pyruvic acid level by itself. The determination of blood pyruvic acid levels revealed normal values in 24 of 26 patients with uncomplicated chronic nephritis and chronic urinary infection regardless of whether the renal function was impaired or not. Even in patients with uremic coma and severe acidosis, the blood pyruvic acid level was at most at the upper limit of normal. The blood sugar values were normal in these patients, and no glycosuria was found. Normal blood pyruvic acid and blood sugar values were also found in 16 patients with essential hypertension who had no signs of renal damage or complications.

Elevated blood pyruvic acid levels in renal disease were obtained only in four patients who also had severe complications, such as cerebral hemorrhage, hypertensive encephalopathy, or pulmonary edema. The hyperpyruvicemia in them was accompanied by hyperglycemia and was regarded as a "stress" phenomenon. Hyperpyruvicemia was also present in six patients with cerebral coma and in eight patients with hepatic coma who had no signs of renal insufficiency. The excretion of pyruvic acid in the urine in five uremic patients was within normal limits. It is concluded that renal disease per se is unlikely to influence the blood pyruvic acid level. When hyperpyruvicemia occurs in patients with renal disease, especially in those in coma, it is presumed to be due to some other disorder known to cause hyperpyruvicemia. The level of the pyruvic acid in the blood may be of aid in the differential diagnosis of various types of coma. Pyruvic acid seems not to be a causative factor in renal acidosis.

RADIOLOGY

Practical Aspects of the Problem of Protection Against Radiation in General Roentgen Diagnosis. F. Fossati. Minerva med. 47: 749-754 (March 17) 1956 (In Italian) [Turin, Italy].

Local and general biological injury is caused by excessive radiation in roentgen diagnosis. The effects manifest themselves late and may be hereditary. Protection is possible if necessary precautions are taken. Some of the effects are superficial lesions, hematological and hemapoietic alterations, formation of malignant tumors, obesity, reduction in fertility, and shortening of the length of life. The permissible professional maximal dose is 0.3 r per week, or, 48 hours of work per week. A special instrument measuring the radiation should be always worn by the radiologist. Lead should be interposed between the operator and the mechanism for radiation when it is not possible to keep at a safe distance. Protective measures could be introduced into the machines for roentgendiagnosis. Operators should wear special protective garments. Tubes should be covered with protective material. Intensity of radiation should not exceed 100 mr/h. at a distance of 1 m. from the focus. Radioscopy should be brief, with maximal opening of the diaphragm. Radioscopy with non-self-centering ducts must be avoided. The operator must be accustomed to the radioscopic vision from the beginning of the examination. Filtration and the distance from skin to the focus should be increased in order to protect the patient. Maximal radiation doses per exposure should be 0.1-0.2 r for the thorax, 2-3 r for the skull, 3-4 r for the digestive system, and 2-4 r for the spine; for kymography of the heart, the maximal dose should be about 4 r.

Nephrocalcinosis in Poliomyelitis with Respiratory Paralysis, with Special Regard to Possibilities of Tomographic Diagnosis. R. Stenström. Nord. med. 55:647-649 (May 10) 1956 (In Swedish) [Stockholm, Sweden].

Nephrocalcinosis was demonstrated by tomography in 9 of 32 poliomyelitis patients with respiratory paralysis admitted to Aurora Hospital between March, 1944, and January, 1955. The examinations were started in April, 1955. Eight patients were examined for the first time during respirator treatment after an average of six months in the respirator; calcinosis was established in four of these. Twenty-four patients, with an average of two months of respirator treatment, had been out of the respirator an average of six and a half months before the first examination. Of the eight, two patients with calcinosis and one patient without calcinosis have died. The calcinosis was most often in the cranial pole of the kidney. A certain relation seemed to exist between the degree of osteoporosis and the occurrence of calcinosis. Urinary infections were more frequent in the patients with nephrocalcinosis than in those without demonstrable calcifications. Nephrocalcinosis was often wholly or partly reversible after treatment. Application of tomography allows small calcifications to be discovered in an early and localized stage even though the patient's condition does not permit urography.

BOOK REVIEWS

Campbell's Operative Orthopaedics. Volumes I and II. Editor: J. S. Speed, M.D., Associate editor: Robert A. Knight, M.D. Third edition. Cloth. $40. Pp. 1103; 68; 1105-2124; 68, with 1323 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1956.

When the original volume was first written over 15 years ago by Dr. W. C. Campbell there was much comment about the value of the book. There had been a great need for this type of book in orthopedics, and the original book fulfilled that need well. With the many changes that took place during World War II, and as new procedures were established, revision was needed, and this was accomplished in the second edition. This third edition is perhaps the most outstanding book of its kind that has ever been published. The co-authors are to be congratulated for the excellence and completeness of the book. As in previous editions, the subject matter is excellently arranged and the illustrations are outstanding. The authors' decision to have special chapters contributed by eminent authorities adds to the general value of the work. The cost of these volumes is high, but, considering the amount of material contained in them, it is not excessive. The book should be made available to all universities and orthopedic departmental libraries for use of the house staff. It is an excellent reference book for practicing orthopedists and should be one of the first textbooks that the younger orthopedist purchases. Each chapter is a complete unit, and a given operative procedure can be reviewed without studying more than one or possibly two sections of the book.

Hunterdon Medical Center: The Story of One Approach to Rural Medical Care. By Ray E. Trussell, M.D., M.P.H., Executive Officer of Columbia University School of Public Health and Administrative Medicine, Columbia University, New York. Half-cloth. $3.75. Pp. 236, with 9 illustrations. Published for Commonwealth Fund by Harvard University Press, Cambridge 38, Mass.; Oxford University Press, Amen House, Warwick Sq., London, E.C.4, England, 1956.

This well-written book is a fascinating story of the effort to solve the problem of community medical care in a rural county in New Jersey. The author was the first director of and had a close association with the project for five years. In the beginning, this county, with a population of 45,000 people, had no hospital within its confines. The planners of this project believed that there was a need for such an institution and proceeded with imagination and hard work to develop a center. It is interesting and informative to read about the early experiences in the education of the people of this county regarding the needs for good medical care. Equally interesting is the emphasis on the fact that here was an opportunity to set up a center that would play an active part in providing comprehensive medical care for the citizens of the county and that, in addition, would focus attention on preventive medicine.

There are many details in this book concerning the period of development of the center—such as the effort that produced a successful financial campaign, which could be profitably followed by other communities considering the same problem, and the extent to which the people contributed even in a small way. The fundamental principles included attracting more general practitioners, having the patients in the area remain in their community for their comprehensive medical care, and enabling the institution to carry on research concerning the health of the citizens. Another important feature was the affiliation with the New York University Medical Center, in regard to both the reference of patients and the rotation of the house staff from the New York University to the center. The latter proved to be of mutual benefit. The extent to which the community has participated in the everyday running of the center is evidenced by the fact that there are so many volunteers working in the hospital.

There is so much of interest and there are so many stimulating ideas in this book that it would be wise for those contemplating the establishment of community hospitals to read it. In this day of emphasis on community action in the problems of medical care, long-term illness, and preventive medicine, this book should be invaluable. It represents not only planning but also actual experience over a two-or-three-year period since the center was established. The last chapter is devoted to the accomplishments of the center and to a frank discussion of the problems that are yet unsolved. The experiment represents a valuable contribution to the question of community medical care and clearly points the way to possible practical application of this experience to any rural community.

The Pregnancy Toxemias or the Encymonic Atelositeses. By G. W. Theobald, M.A., M.D., F.R.C.S. With chapter on Adrenal Cortex by John Dawson, M.B., Ch.B., M.Sc. Cloth. $15. Pp. 488, with 56 illustrations. Paul B. Hoeber, Inc. (medical book department of Harper & Brothers), 49 E. 33rd St., New York 16, 1956.

The author has presented the basic facts about the toxemias of pregnancy and has collected an extensive bibliography from which he has quoted freely. The book is divided into four parts. In the first are discussed the physiology of normal pregnancy, capillary circulation, water metabolism, edema, water diuresis during pregnancy, blood pressure, essential hypertension in the nonpregnant and pregnant woman, and the relationship of the posterior pituitary gland and the adrenal cortex to normal pregnancy. The second part has a chapter devoted to the toxemias of early pregnancy and another chapter to accidental hemorrhage, but the bulk of this section is devoted to the histological pathology of eclampsia and changes in metabolism leading to this disease. The third part is devoted to the various hypotheses that have been advanced to explain eclampsia. One chapter is devoted to the mechanical theories and another to the toxemic theory. The endocrine glands as a causative factor are discussed, and the relationship of the crush syndrome and renal ischemia are considered in another chapter. Three chapters are devoted to the placental hypothesis and four to the nutritional mechanical hypothesis. The fourth part deals with antenatal care in the prevention of eclampsia. One chapter deals with the treatment of preeclampsia, and four chapters are devoted to the treatment of eclampsia. The book is well written and sets forth clearly the present state of our knowledge regarding this disease. One might disagree with the recommendation of spinal anesthesia and/or lumbar puncture in the treatment of persons with severe eclampsia. The maternal mortality of 5.6% with treatment by a modified Stroganoff method under the author's management is not impressive. The use of local infiltration anesthesia in various operative procedures is not sufficiently stressed. The danger of blood transfusion in persons with eclampsia should be mentioned, and the value of venesection is underestimated. The overuse of hypertonic glucose solution is properly criticized.

Essentials of Dermatology. By Norman Tobias, M.D., Dermatologist, St. Louis State Hospital, St. Louis. Fifth edition. Cloth. $8. Pp. 651, with 212 illustrations. J. B. Lippincott Company, 227-231 S. Sixth St., Philadelphia 5; 2083 Guy St., Montreal, Canada, 1956.

This textbook should remain popular with medical students and practitioners, as it has through four previous editions. The paragraphs, at the end of each chapter, on nursing aspects should make it of value to nurses also. The author has concentrated on the dermatoses encountered most frequently in practice, but he also discusses briefly many of the less common skin diseases. The rarities have been omitted. A surprising amount of information has been packed into a relatively small volume and presented in a very readable manner. Of particular value is the chapter on dermatological therapeutics, in which the author explains the general principles of topical and physical therapy and presents numerous therapeutic maxims reflecting a wealth of clinical experience. In this edition the chapters on the most common dermatoses have been expanded, the sections on therapy have been brought up-to-date, and 25 new photographs have been added. An occasional minor change in text might be suggested, such as more exact specification of dosage in a few sections and elimination of an occasional vague expression such as "general tonic treatment." In most places, however, discussions of therapy are current, specific, and adequate. These comments in no way detract from the general merit of the book, which can be recommended.

These book reviews have been prepared by competent authorities but do not represent the opinions of any medical or other organization unless specifically so stated.

Angiocardiographic Interpretation in Congenital Heart Disease. By Herbert L. Abrams, M.D., Assistant Professor of Radiology, Stanford University School of Medicine, San Francisco, and Henry S. Kaplan, M.D., Professor of Radiology, Stanford University School of Medicine. Publication number 279, American Lecture Series, monograph in Bannerstone Division of American Lectures in Pediatrics. Edited by John A. Anderson, M.D., Professor and Head, Department of Pediatrics, School of Medicine, University of Minnesota, Minneapolis. Cloth. $11.75. Pp. 233, with 163 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications. Ltd., 24-25 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1956.

This book is based on a series of 350 angiocardiograms that cover almost all the various types of congenital cardiac defects. The angiocardiographic reproductions are excellent. Adjacent to each angiogram is a detailed black and white diagram with complete text clearly indicating the author's interpretation. An entire chapter is devoted to each congenital cardiac defect, including a brief but concise discussion of the pathological physiology and clinical features. This is then followed by the illustrations and the text on the angiocardiographic interpretation. Another chapter is devoted to technique, equipment, opaque mediums, and principles of angiocardiographic interpretation. This should be read by all who contemplate doing this type of work. Although the volume is small, it is filled with valuable information for those interested in opaque visualization of the heart and great vessels.

Modern Treatment Yearbook 1956: A Yearbook of Diagnosis and Treatment for the General Practitioner. Edited by Sir Cecil Wakeley, Bt., K.B.E., C.B., Senior Surgeon, King's College Hospital, London. Cloth. $6. Pp. 344, with 47 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; published for Medical Press by Baillière, Tindall & Cox, Ltd., 7-8 Henrietta St., Covent Garden, London, W.C.2, England, 1956.

This book is a symposium of the views of British clinicians on current methods of diagnosis and prevention of disease and forms of treatment. Thirty-seven contributors have each provided a chapter that deals with one of the many pathological conditions and medical problems commonly encountered in general practice. A chapter discussing the use of antibiotics is included. Some of the chapters are followed by references for collateral reading. A general index is provided at the end, with principal page references in bold-face type. For the most part the discussions are critical and are written with the simplicity and clarity of style for which the British are noted. In some instances the comments seem more appropriate for students than for experienced clinicians. British trade names and preferences in nonproprietary terms that are applied to certain drugs limit the usefulness of the book for American readers. The book does not mention some of the newer drugs known to American physicians and thus cannot be regarded, for American doctors, as entirely representative of current knowledge in this field.

Clinical Laboratory Diagnosis. By Samuel A. Levinson, M.S., M.D., Ph.D., Director of Laboratories, University of Illinois Research and Educational Hospitals, Chicago, and Robert P. MacFate, Ch.E., M.S., Ph.D., Chief, Division of Laboratories, Board of Health, City of Chicago. Fifth edition. Cloth. $12.50. Pp. 1246, with 244 illustrations. Lea & Febiger, 600 Washington Sq., Philadelphia 6, 1956.

This book has now passed through sufficient editions to become familiar to those interested in laboratory medicine. It contains a wealth of material for the person in the laboratory as well as for the man in practice and provides a useful and practical source of reference on a host of subjects ranging from laboratory findings of special interest in relationship to the mouth to those in connection with the gastrointestinal tract and the kidneys. Also included is a great deal of information pertaining to metabolism, the blood, immunology and serology, cerebrospinal fluid, transudates and exudates, and the sputum. Those interested in general bacteriological skin tests and other biological examinations, laboratory methods in pediatric procedures, tropical diseases, milk and water analysis, histological techniques, and legal medicine and toxicology likewise will find much of practical importance. In addition to the two authors, there are five collaborators bringing special knowledge from their respective fields. This book deserves the attention it undoubtedly will receive from practitioners and laboratory personnel.

Progress in Hematology. Volume I. Edited by Leandro M. Tocantins, M.D., with 27 contributors. Cloth. $9.75. Pp. 336, with illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16; 99 Great Russell St., London, W.C.1, England, 1956.

This summary of the present status of certain developments in hematology consists of 16 well-documented articles written in textbook style. There has been no such summary since Piney's book in 1927. The subjects covered are the absorption of vitamin B_{12}, parenterally administered iron, exchange transfusion in erythroblastosis fetalis, the life span of erythrocytes, abnormal hemoglobin, radioactive colloidal gold in the treatment of severe acquired hemolytic anemia, radioactive phosphorus in primary polycythemia vera, autoimmune thrombocytopenias, surgery in hemophilia, acute fibrinogen deficiencies, factors affecting hemostasis in gastrointestinal hemorrhage, the blood in lupus erythematosus, chemotherapy of leukemia, the biochemistry of leukocytes, hematological recovery from irradiation injury, and agammaglobulinemia. The material is well presented and gathers, in convenient form, data widely scattered in medical journals. The book should be welcomed by all workers interested in hematology.

Modern Trends in Orthopedics (Second Series). Edited by Sir Harry Platt, LL.D., M.D., M.S., President, Royal College of Surgeons of England, Manchester. Cloth. $12.50. Pp. 331, with 226 illustrations. Paul B. Hoeber, Inc. (medical book department of Harper & Brothers), 49 E. 33rd St., New York 16, 1956.

This is the second volume dealing with modern trends in orthopedics and is part of a series of books that includes each of the major fields of medicine and surgery. Each of the orthopedic volumes was edited by Sir Harry Platt, who states in the introduction: "In this new volume, a number of topics of contemporary interest have been deliberately selected in order to focus attention on problems less widely ranging than those which form the content of the first series of *Modern Trends in Orthopaedics.*" The text is beautifully written and printed, and the illustrations are clearly reproduced. The various chapters deal with reconstructive surgery of the hip, peripheral nerve injuries, the role of antibiotics in the treatment of bone and joint tuberculosis, congenital dislocation of the hip, muscle and tendon transposition in poliomyelitis, internal derangements of the knee, traumatic paraplegia, Pott's paraplegia, displacement of the upper epiphysis of the femur, contractures of the hand, and fractures of the neck of the femur. This is a book that all orthopedists should have in their library.

Collagen Diseases Including Systemic Lupus Erythematosus, Polyarteritis, Dermatomyositis, Systemic Scleroderma, Thrombotic Thrombocytopenic Purpura. By John H. Talbott, M.D., Professor of Medicine, University of Buffalo School of Medicine, Buffalo, New York, and R. Moleres Ferrandis, M.D., Training Fellow in Arthritis of Western New York Chapter of Arthritis and Rheumatism Foundation. Cloth. $6.50. Pp. 232, with 30 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16; 99 Great Russell St., London, W.C.1, England, 1956.

This monograph is the culmination of the interest that the senior author has had in collagen diseases for many years. It is a concise description of these maladies, covering the historical, pathological, and clinical aspects and treatment. The colored plates are beautifully illustrative of the subject matter. The manuscript is well written, with a personal touch that makes for easy reading. Factual statements are supplemented with ample references, and the bibliography is more than adequate. The earnest enthusiasm with which the material is presented makes this monograph outstanding. This book can be highly recommended to those interested in collagen and rheumatic diseases.

The Biochemistry and Physiology of Bone. Edited by Geoffrey H. Bourne. Cloth. $20. Pp. 875, with illustrations. Academic Press, Inc., 125 E. 23rd St., New York 10, 1956.

This book, each chapter of which has been prepared by one or more recognized authorities, includes the best of most of the research that has been done in the field of biochemistry and physiology of bone during the past 25 years. Twenty-eight scientists have participated in writing it. The editor is widely known for his interest in this subject and has succeeded in producing a well-ordered arrangement of the material. There is an extensive bibliography and an author index as well as a subject index. This is a reference book rather than a textbook, and it should be of great value to every student or teacher who is interested in a better understanding of bone in health and disease.

QUERIES AND MINOR NOTES

ACETYLSALICYLIC ACID (ASPIRIN) AND ANTICOAGULANTS

To the Editor:—*What is the relative effect on clotting time of acetylsalicylic acid (aspirin) and the anticoagulants usually prescribed, such as Dicumarol. If acetylsalicylic acid is effective in this respect, what may be considered comparable dosage? Presuming that there is a comparable dosage, is there likely to be any untoward effect using such dosage of acetylsalicylic acid? Clinicians have said that there is almost never a vascular thrombosis (coronary included) when the clotting time is high. Please give an opinion on this.* *M.D., Pennsylvania.*

Answer.—Link and associates (*Am. J. Physiol.* **159**:40-46, 1949) demonstrated that salicylic acid in the rat induces a hypoprothrombinemia that can be prevented by natural or synthetic vitamin K. In the rat the potency of salicylic acid was only about one-twentieth that of Dicumarol. S. Shapiro and his coworkers (*Proc. Soc. Exper. Biol. & Med.* **53**:251-254 [June] 1943) demonstrated that the fundamental observations made on the rat also apply to man. Significant hypoprothrombinemia, similar to that produced by therapeutic doses of Dicumarol, has been observed after administration of 6 to 10 gm. of salicylates daily. With continued administration of salicylates, the prothrombin time tends to return to normal. Since the dosage of salicylates necessary to produce a hypoprothrombinemia that could prevent thrombosis is high enough to give rise to toxic effects on the central nervous system and to a disturbance of the acid-base balance or of the electrolyte structure of the plasma, it would appear hazardous to use salicylates for the induction of a therapeutic hypoprothrombinemia. Experience has shown that the incidence of thromboembolic phenomena can be greatly reduced by the judicious use of anticoagulants such as Dicumarol. However, on occasion, thrombosis has been observed to occur while the patient's prothrombin time was kept within the protective range of hypoprothrombinemia.

SEDATION BEFORE ELECTROSHOCK THERAPY

To the Editor:—*I would appreciate advice as to whether a mental patient, receiving electroshock therapy with succinylcholine (Anectine) chloride, should receive previous sedation with a barbiturate. If so, which kind and what dosage would be recommended?* *M.D., Nebraska.*

Answer.—The decision as to whether a patient should receive sedation previous to electroshock therapy should be made independent of whether the therapist administers succinylcholine. The administration of a sedative drug should be indicated by the patient's anxiety concerning the treatment. There are some patients whose anxiety states require sedation, with or without muscle relaxant; with other patients it is unnecessary. For short procedures such as electroshock therapy, intravenously given barbiturate and, above all, thiopental sodium are the drugs of choice. Since the effect of succinylcholine develops before that of the intravenously given thiopental sodium, it is preferable not to give both drugs at the same time. Another important point is that succinylcholine is hydrolyzed by alkaline solutions such as the solution of thiopental sodium; therefore, the solution of succinylcholine should not be mixed with the solution of the thiopental sodium in the same syringe. When administering the combined medication of thiopental sodium and succinylcholine, the dose of the succinylcholine judged to be adequate for the patient has to be determined. A test dose of 10 mg. may be given to serve as a guide to the patient's requirements and the promptness of his recovery. If this dose produces only the relaxation of the eyelids, or of the extremities (a moderate relaxation), then the patient usually requires 20 mg. for an adequate effect, while the patients who show only minimal relaxation after the test dose probably require 30 to 40 mg. The satisfactory method of induction of anesthesia is to administer the thiopental sodium slowly, until the eyelid reflex is abolished. At this time the dose of succinylcholine can be given through the same needle but from a different syringe. When both thiopental sodium and succinylcholine are administered, the aim is to adjust the dose of each drug so that the convulsion is a slight one and is followed almost at once by the return of active breathing. It seems, according to Price and Rogers (Correspondence, *Brit. M. J.* **1**:1027, 1952), that, owing to the rapid action of succinylcholine, a smaller dose of thiopental sodium can be used than with other relaxants. As to the time element, the injection of succinylcholine should follow the injection of the barbiturate in 10 seconds to two minutes. After administration of the succinylcholine, the lungs are inflated with oxygen for 45 seconds; a gauze roll is then placed between the teeth, the relaxed jaw is held against it, and the electroshock therapy is given at once. It is needless to emphasize that either thiopental sodium or succinylcholine may produce respiratory arrest. Therefore, they should be used only by those skilled in the administration of controlled respiration and endotracheal intubation and only when facilities for these procedures and for adequate respiratory exchange with oxygen are immediately available.

CONJUNCTIVAL SENSITIVITY TO TOBACCO SMOKE

To the Editor:—*What is the best treatment for a conjunctival hypersensitivity to tobacco smoke? This condition has developed gradually in a 47-year-old woman who has a history of allergy to timothy grass and orchard grass pollens. Her vision is hyperopic and somewhat astigmatic, which is easily corrected by glasses. Examination of the conjunctivas shows them to be infected at such times. They gradually return to normal, but the symptoms recur regularly each time she is exposed to this irritant. She has shown some favorable although transitory response to treatment with cortisone eye drops.* *M.D., New York.*

Answer.—Treatment of conjunctival hypersensitivity should include: (1) avoidance of tobacco smoke, both use and exposure; (2) local application of antihistaminics such as prophenpyridamine maleate, with or without cortisone; (3) patch tests and desensitization; (4) oral use of antihistaminics such as chlorprophenpyridamine maleate; and (5) appropriate treatment of structural and functional ocular and extraocular disease. The treatment of the secondary infection obviously depends on the organisms involved. A stained conjunctival scraping should be made to determine cells and organisms.

SLIDE CULTURE FOR TUBERCLE BACILLI

To the Editor:—*Please describe the technique of the "slide culture method" for demonstrating Mycobacterium tuberculosis. How does the accuracy of the slide culture compare with that of the usual cultural methods?* *M.D., Ohio.*

Answer.—Following is the technique of the "slide culture method" as described by Pryce (*J. Bact. & Path.* **53**:327, 1941). Method 1: A 4-in. Petri dish is selected with a flat or slightly hollow bottom surface. The sputum is spread on this and dried. The film is treated with 15% sulfuric acid for five minutes. The acid is removed with a pipet and the floor flooded with about 5 cc. of sterile distilled water from a test tube. This is allowed to act for a minute or so and the washing repeated. The medium is then added and the dish placed in the incubator for a week. As medium, one can use 5 cc. of citrated blood and either 5 cc. of water, or, better, a 1% solution of saponin. When incubation is completed, the medium is washed off with water and the film

---

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any medical or other organization unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

stained with Ziehl-Neelsen stain. Counter staining with methylene blue may be omitted. The culture is examined under the low power of the microscope while wet with water or xylene. Method 2: One or more circular patches of sputum are smeared on a glass slide and allowed to dry. A ring of Bakelite, hard fiber, or glass is immersed in melted petroleum jelly and, after draining off the excess, is applied to the glass about each patch of sputum. With a Pasteur pipet, 15% sulfuric acid is placed in the well of the ring, allowed to act for five minutes, and then removed. After the pipet is washed out, the well is filled with distilled water. Two or three washings suffice, but each change of water should be left in for a few minutes. After the final washing, the medium is added—anything from 5 drops to 1 cc. or more, according to the capacity of the ring. The culture may be incubated open to the air in a moist chamber, or closed by applying a coverslip previously immersed in petroleum jelly. Variations in this technique have been reported by Lowry and Berry (*Am. J. Clin. Path.* **20**:273, 1950). The slide culture method is not as sensitive or efficient in detecting tubercle bacilli as the usual culture methods. It would not be satisfactory in a diagnostic laboratory doing large numbers of cultures. Probably its best use is in research work.

HIGH BLOOD CHOLESTEROL LEVEL

To the Editor:—*A 34-year-old woman has had a high blood cholesterol level since October, 1954. Her blood cholesterol level was 411 mg. per 100 cc. in November, 1954. She was put on a rigid diet, and, in December, 1954, the cholesterol level dropped to 387 mg. per 100 cc.; on March 23, 1955, it was 360 mg. per 100 cc. She has been checked every month since that time, and the lowest it has been is 340 mg. per 100 cc. The patient has been treated with Monichol since October, 1955, but the cholesterol level remains high. Could you offer any suggestions for treatment?*

Leland F. Zatopek, M.D., La Grange, Texas.

Answer.—The response of the blood cholesterol level in the patient described to a rigid low-cholesterol diet is about what can be expected in the average patient. This relatively small drop in blood level is due to the fact that cholesterol can be synthesized by the body from simple foodstuffs; therefore, the dietary cholesterol is only a minor factor in the serum level. In addition to diet, thyroid may be effective in lowering the cholesterol level, particularly if some degree of hypothyroidism is present. No other established and satisfactory methods are at present available.

TREATMENT OF ASCARIASIS

To the Editor:—*What is the best treatment for persistent Ascaris lumbricoides? A man and wife, with no children, both have the infestation. Repeated treatment with Crystoids has yielded no results. How soon after Crystoid therapy should Ascaris disappear from the stool?*

Francis M. Lenhart, M.D., Defiance, Ohio.

Answer.—Crystalline hexylresorcinol usually is considered the drug of choice in the treatment of ascariasis, but certain factors must be taken into consideration: 1. Potency of the drug. If the hard gelatin capsules are old they may not dissolve in the gastrointestinal tract and would therefore be ineffective. The preparation should be fresh and should dissolve high in the small intestine so all of the worms will be exposed to the drug. 2. Preparation of the patient. The patient should be on a light, residue-free diet the day before treatment and receive a saline purgative the night before treatment. Two hours after treatment is administered a second saline purgative is given. 3. Reinfection. Sometimes it is difficult to differentiate between failure of treatment and reinfection. If the infection has persisted for more than one year, reinfection has undoubtedly occurred, for the survival time of a mature Ascaris worm in the human intestine is relatively short, rarely exceeding a year.

Two other preparations have proved of value: piperazine (Antepar) citrate and Hetrazan (1-diethyl-carbamyl-4-methyl-piperazine citrate). Methods of treatment are as follows: 1. Crystalline hexylresorcinol (0.1-or-2-gm. hard gelatin capsules). Adult dose is 1 gm. in one dose, on an empty stomach, preceded and followed by a saline purgation as described above. 2. Piperazine citrate. Brown and Sterman (*Am. J. Trop. Med.* **3**:750 [July] 1954) report good results in children weighing over 60 lb. by giving piperazine citrate, 10 cc. (2 teaspoonfuls) twice daily for seven consecutive days. 3. Hetrazan. Etteldorf and Crawford (*J. A. M. A.* **143**:797 [July 1] 1950) report excellent results using Hetrazan in a dose of 6 mg. per kilogram of body weight three times daily for seven days. Ghanem (*Tr. Roy. Soc. Trop. Med. & Hyg.* **48**:73 [Jan.] 1954) reports good results using Hetrazan for 3 to 15 days. He states further that the migrating larvae of Ascaris probably are killed also. The advantage of piperazine citrate and Hetrazan is that the patient requires no preparation and no purgation. The advantage of crystalline hexylresorcinol is that the treatment is completed in one day. Reinfection should be prevented by proper personal hygiene and sanitary disposal of excreta. After the eggs are passed they become infective in 15 to 20 days but may remain viable on the soil for months or even years.

ANTIHYPERTENSIVE MIXTURES

To the Editor:—*A man, aged 69, had a transient apoplectiform attack. His blood pressure is 230/100 mm. Hg. Treatment with Mio-Pressin 1 brought his blood pressure down to 190/80 mm. Hg. He has been taking it now for 12 days. How long should he continue medication, and are there any dangerous side-effects?*

M.D., New York.

Answer.—It would be undesirable to lower the arterial pressure beyond the point where it is now. This is a patient with arteriosclerotic hypertension in whom the diastolic pressure, as is to be expected, is not high. Too much lowering of pressure in such persons may lead to inadequate perfusion of the brain. Mio-Pressin, like any of the mixtures of antihypertensive drugs, fails to allow the flexibility of dosage of the individual drug components required for proper management of hypertension.

CANDIDA INFECTION OF BLADDER

To the Editor:—*What is the best management of a 40-year-old woman with persistent Candida infection of the bladder, a normal upper urinary tract, and a few granulations about the neck of the bladder?*

M.D., Texas.

Answer.—Persistent infection of the bladder caused by Candida occurs infrequently. On the other hand, Candida infection of the vagina is frequently observed, particularly during pregnancy. It may be assumed that infection of the bladder with Candida is secondary to similar infection of the vagina. It would, therefore, be advisable to eliminate the possibility of a persistent vaginal infection. Involvement of the bladder usually responds to lavage with a solution of gentian violet (1:1,500) or a weaker solution of acriflavine. Recently, a new drug, nystatin, has been found to be of value in treating Candida infection. Daily irrigations of the bladder with a solution made by dissolving one tablet of nystatin in a liter of water may be tried. Granulations of the neck of the bladder should be treated by topical application through the cystoscope with a 1% solution of gentian violet. It should also be remembered that bacteria commonly found with cystitis may be obscured by the Candida infection. Should these bacteria be discovered after the Candida infection has been removed, antibiotics should be administered according to the type of bacteria found.

PRECORDIAL PAIN IN MORPHINE ADDICT

To the Editor:—*Seven months ago a 59-year-old morphine addict had an acute myocardial infarction. At present her condition is fairly good, but she still complains of periodic pain. Is it correct (according to the Federal Narcotic Law) to prescribe for her, at least from time to time, a narcotic for relief of pain?*

Julian Movchan, M.D., Oakwood, Ohio.

Answer.—The Federal Narcotic Law does not prohibit a physician from administering opiates to a former addict, or to an actively addicted person, for the relief of pain. The law requires that the physician prescribe or dispense narcotics "in the course of his professional practice only." This has been interpreted by the courts to mean that the physician must be acting in good faith, e. g., prescribing narcotics for what he

believes will benefit his patient. The regulations set up to carry out the purposes of the narcotic law do prohibit the prescribing of narcotics for the mere maintenance of addiction, but this prohibition would not appear to apply in the case described. Although there is no legal reason why narcotics could not be given to the patient mentioned, careful consideration should be given to the actual need for narcotics. If the pain is that of angina, it could probably be relieved more quickly and more efficiently by glyceryl trinitrate than by morphine. Furthermore, the repeated use of narcotics in any chronic disease can lead to addiction. Since this particular patient is a former addict, the danger would be very great. The patient certainly should never be given narcotics for self-administration. In the event that the patient developed status anginosus or another infarct, opiates should, of course, be used. In such a situation the doses should be the smallest that would give an adequate degree of relief from pain. Additional doses should be given only as needed, and administration of the drug should be discontinued as soon as the patient's condition permitted.

PREPARATION OF SKIN FOR SURGERY

To the Editor:—*What antiseptic is most widely used now for painting the abdomen before surgery? Does thimerosal (Merthiolate) still hold first place, and what is its relative value in comparison to benzalkonium (Zephiran) chloride?*

M.D., Oregon.

Answer.—At present there are many agents for preparation of the skin of the operative site. Any one of these agents is satisfactory for this purpose if used properly. The area should always be cleaned well with soap and water the night before operation. If a chlorinated hydrocarbon is to be used, a soap containing this agent should be employed. In the operating room any one of the mercurial antiseptics, such as thimerosal, is a satisfactory preparation if the skin has first been cleaned with alcohol and ether. If a chlorinated hydrocarbon such as hexachlorophene is used, it is important that no other agent be employed after its application that might interfere with the protective film that is left by the chlorinated hydrocarbon. If a quaternary ammonium compound such as benzalkonium chloride or benzethonium (Phemerol) chloride is used, it must be remembered that these agents are inactivated by soap. Resorcinol compounds might be used, but these are not as good as the foregoing three groups of agents. If hexachlorophene is used, it is well to wet-wash the operative site with this agent for about five minutes; then the area should be painted with this agent and the excess dried with a sterile towel.

SENSITIVITY TO AMINOPYRINE

To the Editor:—*How does aminopyrine cause leukopenia or agranulocytosis? What, if any, are the chemical, enzymic, or vitamin changes in bone marrow, blood, or tissues before and/or during the development of granulopenia?*

M.D., Texas.

Answer.—When Madison and Squier (*J. A. M. A.* **102**:755-759 [March 10] 1934) pointed out the relation between aminopyrine and the development of severe leukopenia they suggested it might be on the basis of drug sensitivity. Later, Dameshek and Colmes (*J. Clin. Invest.* **15**:85-97 [Jan.] 1936) were able to produce extreme granulocytopenia in patients who had had previous attacks of the disease by injecting a small amount of the drug intradermally. It was postulated that the leukopenia occurred as a result of a sensitivity reaction in which a drug-protein linkage was involved. Moeschlin and Wagner (*Acta haemat.* 8:29-41 [July-Aug.] 1952) have done work suggesting that, as a result of this sensitivity, agglutinins are produced that cause striking agglutination of leukocytes. These, in turn, are filtered out rapidly in the lung. Moeschlin has shown that giving a patient sensitive to aminopyrine a small dose of the drug and then transfusing the patient's blood into a nonsensitive individual will produce a striking reduction in the leukocytes in the nonsensitive individual. The actual mechanics in changes in the bone marrow are probably on the basis of an emptying out of the cells from the bone marrow, so that, with prolonged administration of the drug after the reaction occurs, the cells in the marrow are at more and more immature levels.

KEROSENE SWALLOWED BY CHILDREN

To the Editor:—*Where liquid hydrocarbons, such as kerosene and furniture polish, have been swallowed by children, is gastric lavage indicated? If indicated, what technique will avoid the possibility of getting more of the hydrocarbon over into the trachea in the process?*

Harry D. Baernstein Jr., M.D., Racine, Wis.

Answer.—Current recommendations regarding gastric lavage in cases in which kerosene or related petroleum distillates have been swallowed by children are controversial. Experienced physicians make opposing recommendations for and against emptying the stomach. Reported experimental evidence is also conflicting and has been variously interpreted. A manual on accidental poisoning in childhood, published by the American Academy of Pediatrics but not an official academy statement, suggests that prompt and early lavage in cases of kerosene ingestion would be beneficial. If this lavage is carried out with the child properly restrained, flat on a table with the head lower than the feet (Trendelenburg position), the opportunities for getting the hydrocarbon into the trachea are considerably minimized. However, a substantial number of individual members of the Academy of Pediatrics and others feel this may increase the likelihood of tracheal aspiration and consequent pulmonary complications.

INTELLIGENCE TESTS

To the Editor:—*Where can I find the psychometric tests that are acceptable today and what they mean? Is the Minnesota multiphasic test one of these?*

A. L. Henricksen, M.D., Van Nuys, Calif.

Answer.—Psychometric test is a term generally applied to those tests that deal with the measurement of intelligence. The Minnesota multiphasic test is not an intelligence test but, rather, seeks to evaluate personality traits and classify the subject according to the pathological trends indicated by his response to the test. The most frequently used psychometric or intelligence tests are the Wechsler-Bellevue intelligence scale, forms I and II; the Wechsler adult intelligence scale; and the Wechsler intelligence scale for children. For children and adolescents the revised Stanford Binet (1937 revision) is also commonly employed. The personality tests in general use today are the Rorschach, the thematic apperception test, the Bender gestalt test, the Minnesota multiphasic test, and a number of sentence-completion tests. There are several books that deal with the theory and application of both the various intelligence and personality tests that are most frequently used in clinical practice today. Among these are "An Introduction to Projective Techniques" (Anderson, H., and Anderson, G.: New York, Prentice-Hall, Inc., 1951); "Projective Techniques" (Bell, J. E.: New York, Longmans, Green & Co., Inc., 1948); and "Appraising Personality" (Harrower, M.: New York, W. W. Norton, 1953). The textbooks indicated above, as well as the individual tests and test materials, are available from the Psychological Corporation, 522 Fifth Ave., New York.

TRANSFUSIONS

To the Editor:—*Can blood transfusions be given routinely with 5% dextrose solution running in the same tube at the same time? In surgery the anesthetist seems to prefer to give dextrose and saline solution in one bottle and blood in another, each connected by a wide tube to a single tube through which the infusion is given into a single vein.*

M.D., Alabama.

Answer.—It is inadvisable to give simultaneous infusions of dextrose solutions and whole blood. De Gowin and others (Blood Transfusion, Philadelphia, W. B. Saunders Company, 1949, p. 278) call attention to the danger of extravascular hemolysis resulting from the mixture of stored blood and dextrose solutions. Wilson (*Am. J. Clin. Path.* **20**:667 [July] 1950) reports a transfusion reaction traceable to the clumping that occurs in a mixture of dextrose solution and citrated whole blood. Dreyfus and Salmon (*Presse méd.* **60**:845 [June 7] 1952) point out the danger of clumping and of increased fragility of red blood cells exposed to dextrose solutions.

FEET OF DANCERS

To the Editor:—*An abstract in* The Journal *(Dec. 27, 1952, page 1732) on "Studies on the Feet of Dancers" indicated that the feet of children who performed modern dances nearly all were splayed or flat and that these children had other difficulties presumably due to the lack of proper support of the foot. A patient, aged 11, has been particularly active in this field, and I feel that her feet are gradually becoming more splayed and flat. How can further changes in the feet be prevented?* *M.D., New Jersey.*

Answer.—Toe slippers will, of course, keep the foot narrow and small, but they tend to contract the foot and cause talipes equinus, talipes cavus, and contracture of the toes. This is true when the dancing is carried out over a long period of time. Modern dancing allows full, free use of the foot and increases its strength, but it does allow the foot to spread. If a child's foot is strained during this process, it, too, will be subjected to a type of deformity—usually hallux valgus. The idea in modern dancing is to have absolute freedom of the body, including the foot. Modern dancing when carried out on soft sand at the beach or on a lawn would not result in a deformity. It is conceivable that a shoe could be made that would prevent the foot from spreading. It would have to be soft-soled and laced. Instructors in modern dancing are of the opinion that unless the foot of a child is strained in dancing, the foot will not spread. If properly taught, modern dancing will increase the strength of the foot and improve the appearance. Exponents of modern dancing have well-appearing, perfectly normal feet to prove this. It would seem, therefore, that the best advice to prevent further changes in the feet of a child would be to permit a limited amount of dancing sufficient to increase the strength, but not sufficient to permit strain. It must be kept in mind that there are contributing factors to the spread of the foot besides the dancing. There may be an initial weakness or a congenital tendency toward flat feet, poor muscle tone, or excessive body weight.

DIETHYLSTILBESTROL FOR ORCHITIS

To the Editor:—*Would you please inform me as to the status of diethylstilbestrol in the prophylactic treatment of the orchitis secondary to mumps in males at and past the adolescent stage?* *Henry C. Zingher, M.D., Rushville, Ill.*

Answer.—Hoyne, Diamond, and Christian (*J. A. M. A.* **140**:662 [June 25] 1949) reported highly favorable results with the use of 5 mg. of diethylstilbestrol daily in both prophylactic and therapeutic treatment of mumps orchitis. They observed a rather rapid therapeutic response, decrease in morbidity, and shortening of the convalescent period from three to five days. In none of their patients was operation necessary. Treatment is probably worthy of trial in some patients. Gellis, McGuinness, and Peters (*Am. J. M. Sc.* **210**:661 [Nov.] 1945) used gamma globulin obtained from the convalescent mumps serum in a series of patients with mumps and obtained a significant decrease in orchitis.

CARE OF NEWBORN INFANTS

To the Editor:—*In this hospital a newborn baby is placed on the mother's abdomen and the cord is clamped with a Ziegler clamp and cut. The baby is then wrapped in a warmed receiving blanket and transferred to an electrically heated resuscitator, where suction of the oropharynx is performed. After a variable length of time the baby is carried in the nurse's arms to the nursery, 122 ft. away on the same floor, and en route is shown to any of the family in attendance. The rectal temperatures of the babies so handled, on arrival in the nursery, are frequently in the 96-97 F (35.5-36.1 C) range. It has been suggested that an infant incubator be used in the delivery room to prevent heat loss by the newborn infant and that the baby be transported to the nursery still in the incubator. Any comments in reference to our present procedure would be appreciated.* *M.D., Virginia.*

Answer.—In the "Standards and Recommendations for Hospital Care of Newborn Infants, Full-Term and Premature" (Evanston, Ill., American Academy of Pediatrics, 1954), section 6 on immediate care in the delivery room states, "A warmed incubator or heated bed is required for a newborn infant. This should be of a type approved by the Council on Physical Medicine of the A.M.A. and the Underwriters Laboratory as explosion proof." Under transfer to nursery is this statement: "Transfer should be by a route which is as free of contact with other persons as possible. There should be a moveable oxygen supply for infants whose respirations are not normal. A moveable heated bed should be available when needed."

SUBJECTIVELY AUDIBLE PULSATIONS

To the Editor:—*A 69-year-old woman with essential hypertension and relatively severe arteriosclerosis has been taking 0.1 mg. of reserpine twice a day. Her average blood pressure before treatment was 230/140 mm. Hg and is now 150/95. Her main problem is persistent throbbing in her head with each heartbeat. The throbbing is bilateral and worse at night. Barbiturates control this fairly well but are unacceptable to the patient because of the associated drowsiness. Is there any other treatment?* *Dale R. South Jr., M.D., Troy, Ohio.*

Answer.—Awareness of the pulse, in the head, ears, or elsewhere in the body, occurs independently of arterial hypertension and/or arteriosclerosis as well as coincident to these disorders. It is not a symptom of circulatory impairment but is a common complaint in persons who are apprehensive about their health, particularly if the fears are focused on cardiovascular disease. In cardiac neurosis this symptom is frequent. Since it is subjective and associated more with apprehension of impending catastrophe than with actual present distress, it often resists therapy. Drugs are not the answer, nor is the answer simple reassurance without convincing explanation of the variability in somatic awareness associated with psychic stress. Careful inquiry regarding the onset of this complaint will usually reveal an association with some experience intensifying anxiety. The psychotherapy of the neuroses cannot be outlined here, nor would a general discussion be profitable. Each instance must be handled individually. It is most important that explanation of the insignificance of the phenomenon be clear, detailed, convincing, and sincere. If the awareness of the pulse is felt to be significant, anxiety is intensified and the symptom is perpetuated. Diversion of attention will more often than not erase the sensation. This can be used as objective evidence in instructing the patient.

SENSITIVITY TO ASPIRIN

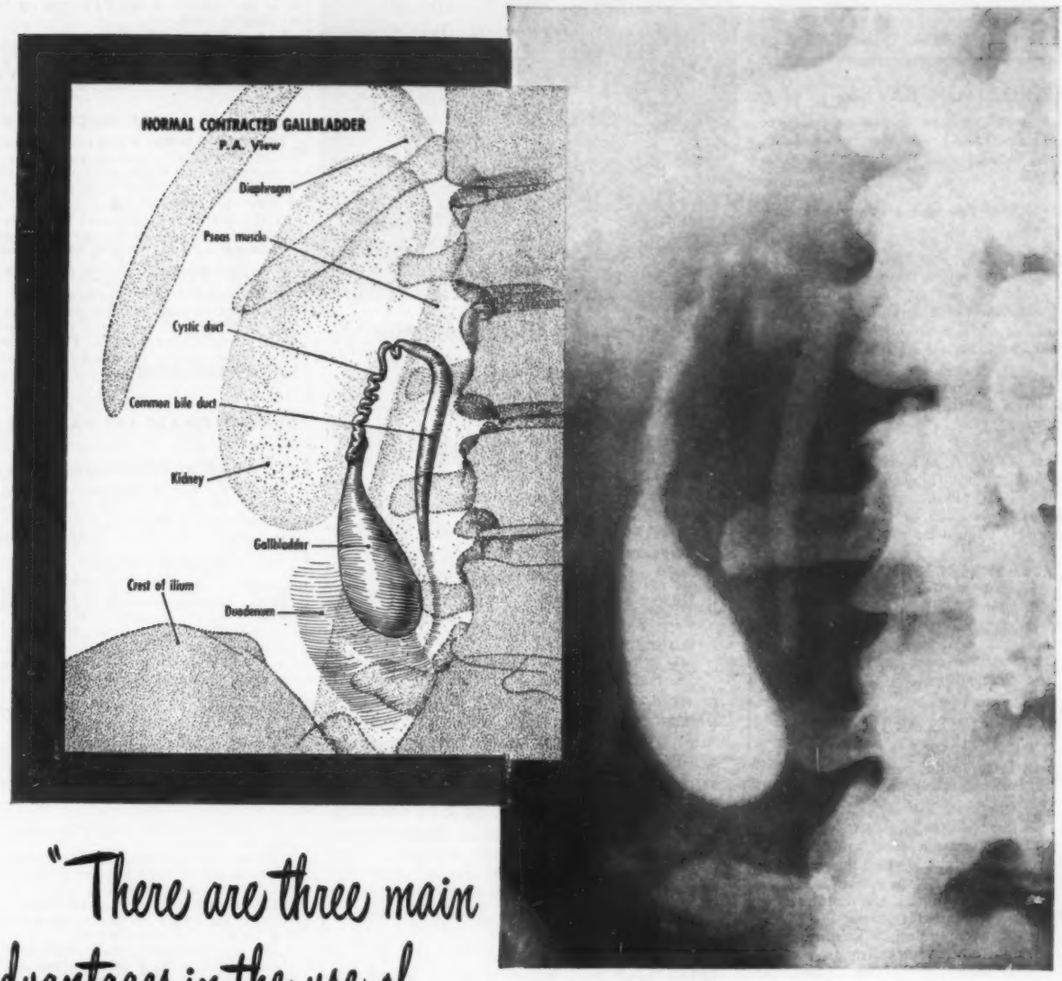
To the Editor:—*In patients who are clinically sensitive to aspirin, what drugs may be safely employed as antipyretic and analgesic substitutes?* *M.D., California.*

Answer.—Patients who are allergic to aspirin can usually take sodium salicylate, acetophenetidin, acetanilid, and aminopyrine. However, not infrequently such patients fail to tolerate some of these drugs also. Apamide (N-acetyl-*p*-aminophenol) is a good substitute for aspirin.

JOINT PAIN IN PATIENT WITH PURPURA

To the Editor:—*In* The Journal, *April 21, 1956, page 1438, is a question under the heading, "Joint Pain in Patient with Purpura." In the answer the consultant made an important omission of differential diagnosis. It seems to me that any patient receiving cortisone or related steroids, especially when therapy is continued for a long time, who develops symptoms of generalized bone and muscle aches and pains, should be considered first of all to have iatrogenic hypercortisonism or hypocortisonism. In the past this syndrome related to steroid therapy has not been properly recognized. It has been described by Slocumb in* Proceedings of the Staff Meetings of the Mayo Clinic *(28:655, 1953), by Freyberg in the book "Corticotropin, Cortisone, and Hydrocortisone" (Philadelphia, Lea & Febiger, 1953), and by Hench and Ward in "Medical Uses of Cortisone, Including Hydrocortisone and Corticotropin" (New York, Blakiston Company, 1954).*

G. P. Nichols, M.D.
7010 Chicago Ave.
Minneapolis 23.



"There are three main advantages in the use of

Telepaque®

SUPERIOR ORAL CHOLECYSTOGRAPHY AND CHOLANGIOGRAPHY

1. **Excellent cholecystograms are readily obtainable.**
2. **The side reactions are usually minimal, only rarely very disturbing, and often completely absent.**
3. **In a fairly large percentage of cases, the cystic and the common ducts are quite definitely outlined, and occasionally even the hepatic duct."**

Buckstein, Jacob: The Digestive Tract in Roentgenology. Philadelphia, J. B. Lippincott Co., 2nd ed., 1953, vol. 2, p. 1003.

DOSAGE:

The average adult dose of Telepaque is 3 Gm. (6 tablets). In persons of thin or medium build, weighing less than 150 lb., 2 Gm. (4 tablets) may be sufficient.

SUPPLIED:

Tablets of 0.5 Gm. in envelopes of 6 tablets, boxes of 5 and 25 envelopes, and bottles of 500.

Winthrop LABORATORIES

NEW YORK 18, N. Y. WINDSOR, ONT.

Telepaque (brand of iopanoic acid), trademark reg. U. S. Pat. Off.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 N. Dearborn St. Chicago 10, Ill.
Phone WH 4-1500 Cable Address "Medic" Chicago

SUBSCRIPTION RATES

Price per annum in advance, including postage: Domestic, $15. Canadian, $17.00. Foreign, $21.50. Price to students, interns and residents: $9.00 in U. S. & possessions.

SINGLE COPIES of this and previous calendar year, 45 cents each.

REMITTANCES should be made by check, draft, registered letter, money or express order. *Currency should not be sent unless the letter is registered.* Stamps in amounts under one dollar are acceptable. Make all checks, etc., payable to "AMERICAN MEDICAL ASSOCIATION."

WARNING: Pay no money to an agent unless he presents a letter showing authority for making collection.

CHANGE OF ADDRESS notice should be received at least 3 weeks prior to date change is to go into effect, and should state whether change is permanent or temporary. Both old and new address should be given.

WHEN COMMUNICATIONS concern more than one subject—manuscript, news items, reprints, change of address, payment of subscription, membership, information wanted, etc.—correspondents will confer a favor and will secure more prompt attention if they will write on a separate sheet for each subject.

CONTRIBUTORS

EXCLUSIVE PUBLICATION: Articles are accepted for publication on condition that they are contributed solely to this journal.

COPYRIGHT: Matter appearing in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is covered by copyright. Permission will be granted on request for the reproduction in reputable publications of anything in the columns of THE JOURNAL if proper credit is given. However, the reproduction for commercial purposes of articles appearing in THE JOURNAL or in any of the specialty journals published by the Association will not be permitted.

MANUSCRIPTS: Manuscripts should be typewritten, double-spaced and the original, not the carbon copy submitted unrolled. Carbon copies, or single-spaced manuscripts will not be considered. Footnotes and bibliographies should conform to the style of the Quarterly Comulative Index Medicus published by the American Medical Association. This requires in the order given: name of author, title of article, name of periodical, with volume, page, month—day of month if weekly—and year. Because of lack of space, it is necessary to limit the number of bibliographic footnotes to eighteen. Unused manuscripts are returned by regular mail. *Used manuscripts are not returned.*

RESPONSIBILITY FOR STATEMENTS: While manuscripts are subject to editing so that they conform to the style adopted by the American Medical Association for its publications, the author assumes the responsibility for the statements he makes. Unless so stated, the opinions expressed in articles in THE JOURNAL do not represent those of the American Medical Association or any other organization.

ILLUSTRATIONS: Half-tones and zinc etchings will be furnished by THE JOURNAL when satisfactory photographs or drawings are supplied by the author. Each illustration, table, etc., should bear the author's name on the back. Photographs should be clear and distinct; drawings should be made in black ink on white paper. Used photographs and drawings are returned after the article is published.

PRICE LIST

A price list describing the various publications of the Association will be sent on request.

AMERICAN MEDICAL ASSOCIATION
535 N. DEARBORN STREET, CHICAGO 10

99% of your patients will say . . .
"Meritene®
WHOLE PROTEIN SUPPLEMENT
tastes good!"
(as good as ice cream!)

Why so much emphasis on taste? Because, simply stated, there is no value in any nutritional product—regardless how good the analysis looks—if it is not acceptable to the patient.

Meritene Whole Protein Supplement *is* acceptable to patients because of its pleasant ice-cream-like taste. (Try it yourself!) And, it's easy to prescribe, easy to administer, and economical for patients who use it at home.

MERITENE mixes with milk in seconds (and *stays* mixed) for ideal high-protein supplementation wherever required. One 8-ounce Meritene Milk Shake provides over one-quarter the N.R.C. Daily Dietary Allowances for protein and all essential vitamins and minerals.

MERITENE has been widely used by doctors and dietitians ever since its introduction in 1940. Available at all drugstores in 1 and 5 lb. cans, chocolate or plain flavor. (Institutional size 25 lb. cans as low as 76¢ per pound on direct order from Minneapolis.)

MORE NUTRITIVE THAN EGGNOG

	8 oz. MERITENE MILK SHAKE	8 oz. EGGNOG*
Protein	17.9 gm.	14.6 gm.
Fat	9.5 gm.	15.0 gm.
Carbohydrate	28.6 gm.	24.7 gm.
Iron	4.46 mg.	1.5 mg.
Calcium	.58 gm.	.31 gm.
Phosphorus	.46 gm.	.33 gm.
Vitamin A	2380 I.U.	940 I.U.
Thiamine	.77 mg.	14 mg.
Riboflavin	1.64 mg.	.56 mg.
Ascorbic Acid	25.7 mg.	3.0 mg.
Vitamin D	161 I.U.	31 I.U.
Cholesterol	38.4 mg.	299 mg.
Calories	270	291 mg.

*Eggnog nutritive value from Bowes & Church, 7th Ed. 1951

ALSO AVAILABLE
NEW INSTANT MERITENE

FREE 1-LB. CAN—CLIP AND MAIL TODAY

MA-916
MERITENE, c/o THE DIETENE COMPANY
3017 Fourth Ave. So., Minneapolis 8, Minn.
Please send me a FREE one-pound can of INSTANT MERITENE, plus a supply of comprehensive MERITENE Diet Sheets.
Name_____MD
Address_____
City_____Zone____State____

A product of
THE DIETENE COMPANY
MINNEAPOLIS 8, MINNESOTA

Classified Advertisements

For personal classified advertisements the rate is $7 per insertion for 30 words or less, additional words 25c each.

SEMI-DISPLAY ANNOUNCEMENTS

FOR PERSONAL CLASSIFIED ADVERTISEMENTS set in bold type (like this paragraph) the rate is $8.75 per insertion for 30 words or less, additional words 30c each.

FREE INSERTIONS

Results are better when an advertisement receives several insertions, and to those who remit for four consecutive insertions of a classified advertisement, two additional insertions will be offered free of charge, provided the first four do not result in a satisfactory acceptance of the offer. Requests for free insertions must be received within two weeks following date of fourth insertion.

COMMERCIAL CLASSIFIED ADS

For classified advertisements of a commercial or promotional nature, the rate is $9 per insertion for 20 words or less, additional words 30c each. For semi-display, $11.25 for 20 words or less, additional words 40c each. This rate is given for **EACH INSERTION,** no free insertions.

CLASSIFIED ADS ARE PAYABLE IN ADVANCE

BOX NUMBER ADVERTISEMENTS

A fee of 45c is charged to have answers sent care of A. M. A. Count 4 words for box number instructions. Letters sent in care of THE JOURNAL are forwarded directly to the advertiser as received.

INQUIRIES ABOUT BOX NUMBER ADVERTISEMENTS

THE JOURNAL is not permitted to divulge the identity of advertisers who have their mail sent care of A. M. A. If further information about an ad of this type is desired, correspondence should be addressed directly to the advertiser in this manner.

All replies to key numbers are mailed the same days as received.

Physicians who are not members of county medical societies should submit professional references with their advertisements and thus avoid delay.

The right is reserved to reject or modify all advertising copy in conformity with the rules of the Advertising Committee.

All questionable items will be excluded from these columns and notification of any misrepresentation seen by readers will be appreciated.

CLASSIFIED ADVERTISING FORMS CLOSE FRIDAY NOON 15 DAYS PRIOR TO THE DATE OF ISSUE

Journal A.M.A., 535 N. Dearborn St., Chicago 10

NOTICE

WORLDPOST NOW HAS A U. S. AGENT—YES, YOU can now buy your fine German photographic and technical equipment at Worldpost's famous prices, but deal direct with a U.S. business firm; you send your order direct to the address below, and we handle the rest; you still save 30 to 50%, even after paying U. S. duties; examples: Exakta: the only completely versatile 35 mm camera; automatic diaphragm Zeiss Tessar F2.8, $149; (duty $19.60) automatic diaphragm Zeiss Biotar F2.8, $185 (duty $23) automatic diaphragm Schneider Xenon F1.9, $193 (duty $26.50); Veral multicombination for lab and technical work, $58.80 ($6.00), Rolliflex (2¼ x 2¼ twin lens reflex, (price includes deluxe leather carrying case) F3.5 $149, ($15.75), F2.8D, $199, ($21.80); Similar prices on most other famous name cameras. Noel R. Nelson, Export/Import, 7810 Greenwood Avenue, Washington 12, D. C., U. S. A.

PHYSICIANS WANTED

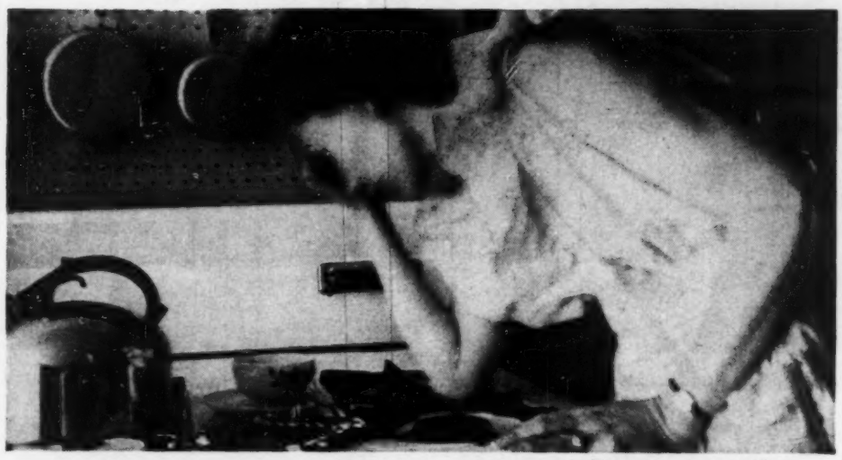
WANTED—MEDICAL DIRECTOR; FOR PROMINENT, progressive processing type of company in growing midwestern city of 75,000; management has long maintained highly adequate medical department in specially designed building to service 3,000 employees; at present, has 5 nurses and 2 part-time local physicians; growth of company now requires permanent full time physician with industrial medical experience or who has done graduate work in this field; age 30 to 40 preferred; will report to top management and has it's complete backing; splendid opportunity for competent physician to establish own program with excellent facilities and run with free hand; city has good hospitals and successful candidate is assured of good community acceptance; starting salary in $12,000 to $15,000 range depending on qualifications; all inquiries will be handled confidentially; if you cannot take advantage of this opportunity, please pass it on to one who can. Box 1924 C, % AMA.

(Continued on page 47)

THORAZINE*

- **over ~~7~~ 8 million patients treated in the United States**
- **over ~~4,500~~ 5,000 articles published throughout the world**

*T.M. Reg. U.S. Pat. Off. for chlorpromazine, Smith, Kline & French Laboratories

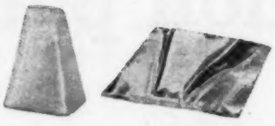


pregnancy not advised

This patient with heart disease uses the suppository—generally the most acceptable and convenient method.

- proved—only spermicidal product now prescribed at leading maternity clinic after 14 years of clinical testing
- forms spermicidal barrier of tenacious, penetrating unbroken film at cervical os within 15 minutes—persists for many hours
- well tolerated—no leak, stain or odor

Small 2 Gm. suppository contains 0.02% phenylmercuric acetate, 0.2% methylbenzethonium chloride and 0.1% methylparaben in a water-miscible base. Hermetically sealed in foil. Box of 12.



Lorophyn®
SUPPOSITORIES

EATON LABORATORIES, Norwich, N.Y.

WORMS make NO SOCIAL DISTINCTION!

NOW YOU CAN ELIMINATE BOTH PINWORM & ROUND WORM INFESTATIONS EASILY with PROVEN PARAZINE

Piperazine Citrate

PARAZINE is a pleasant tasting, non-alcoholic, non-staining, unusually effective syrup. Recent clinical work substantiates earlier observations as to the effectiveness of PARAZINE against Ascaris and Enterobius infestations. Administration is both simple and safe. Fasting, involved dosage schedules, purges or enemas are not necessary. Reference—Hoekenga, Mark T., Am. J. Trop. Med. Hyg., 4, 6, p. 1088, 1955 (Nov.)

4 oz., Pints, Gallons

TUTAG Pharmaceuticals
S. J. TUTAG & CO.
19180 MT. ELLIOTT AVENUE
DETROIT 34, MICHIGAN

For HARD, DRY STOOLS OF CONSTIPATED BABIES

Gentle laxative modifier of milk. Promotes aciduric bacteria. Grain extractives and potassium ions contribute to gentle laxation. Just 1 or 2 tablespoonfuls in day's formula softens stools, usually over night.

Borcherdt MALT SOUP Extract

GOOD FOR GRANDMA, TOO!

New Dietary Management
For CONSTIPATED ELDERLY

Especially valuable for thin, under-par elderly patients with hard, dry stools. Supplies nutritional factors from rich barley malt. DOSE: 2 Tbs. b.i.d. until stools are soft (may take several days), then 1 or 2 Tbs. at bedtime. Take by spoon, in coffee or in milk.

*Specially processed malt extract neutralized with potassium carbonate. In 8 oz. and 16 oz. bottles.

SEND FOR SAMPLE
BORCHERDT MALT EXTRACT CO.
217 N. Wolcott Ave. Chicago 12, Ill.

TONICS AND SEDATIVES

♠

my favorite story

In this space will be published anecdotes submitted by physicians concerning their practice or people in general. Contributions for "My Favorite Story" are welcome.

♠

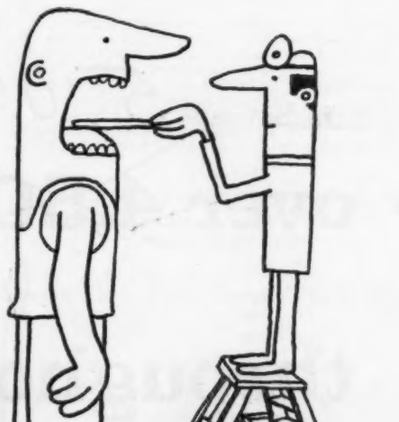
A spy at one of Mr. Toscanini's rehearsals at NBC reported that the maestro broke his own record for raising h--- in general when a harp player required to play one single note in a symphony plucked the wrong string.

The orchestra began over again, and when the time came for the harpist to play his note, he was so flustered that he repeated his mistake.

The maestro strode from the rehearsal in speechless rage.

When the orchestra assembled for the actual broadcast the next afternoon, the harpist discovered that every string but the one he would be called upon to pluck had been removed from the instrument.

♠



♠

the poetry corner

She sat on the bridge in the gloaming
And tickled his face with her toes.
But she was a Jersey mosquito
And the bridge was the bridge of his nose.

♠

'Twas in a restaurant they met
Brave Romeo and Juliet.
He had no cash to pay his debt
So Romeo'd what Juli'et.

(Continued on page 50)

(Continued from page 44)

The Medical Bureau

PALMOLIVE BUILDING CHICAGO

ACADEMIC: (A24) Ass't or assoc prof; OB-GYN full time faculty.

ALLERGY: (Y25) Ass'n, internist & pediatrician, Board men, practicing allergy, univ. town, So

ANESTHESIOLOGY: (B23) Ass't; vol. gen. Hosp., 400 beds; $15,000-$20,000; E.

ASSISTANTS: (C98) By G.P; county seat town, prosperous farming area, Tenn. (C99) By Board surgeon; duties gen. practice, OB., ped; suburb, univ. city, Ohio

DERMATOLOGY: (D43) Group estab'd '10; staff of 22; partner oppor; univ. city, SW.

GENERAL PRACTICE: (F19) Ass'n, young GP; lge practice; college town, near mountains, Ariz; ideal climate; salary at first; full partner, later. (F20) Ass'n, GP group, 3 men; county seat town, Oregon; partner 2d yr. (F21) Group ass'n; pref. one with some training anes; resort town, Finger Lakes region, N.Y.; salary plus %. (F22) Ass'n, 3 GP's, well estab, coll. town, 40,000, Tenn; sal., %. (F23) Ass'n, Board surg. & Board internist; college town, Chicago suburb.

INDUSTRIAL MEDICINE: (G83) Ass'n, air lines; pref. one trained aviation med; MW. (G84) Med. dir; new plant; Florida. (G85) Plant MD; excel oppor. learn atomic med; 24,000 employees; univ. city; Tex.

INTERNAL MEDICINE: (H72) Ass'n, 22 man group; own 200 bed hosp; practice draws from 6 states; if subspecialty, hematology, cardiology, GI or pulmonary diseases; $15,000. (H73) Ass'n, 2 Board surgeons; oppor, develop lge private pract; med. school city, W. (H74) Qual. cardiac catheterization to direct lge cardiac clinic, teh'g hosp; duties: research, teh'g, clinical med; E. (H75) Ass'n, Board internist well estab, town 40,000, Texas; partner.

INSURANCE MEDICINE: (X41) Ass'n med. dir; internist, Dipl. or elig. req; Calif.

OALR: (E28) Oto ass'n Board Oph. & oto; unopposed 60 yr old practice; excel. facilities; oppor. affil. teh'g hosp; partner; Calif. (E29) Oph. or OALR; ass'n, Board oph., long estab. Fla; partnership. (E30) Oto; group estab '32; univ. city, med. center, Pac. NW.

OBSTETRICS-GYNECOLOGY: (J64) Head dept, group staffed by men long estab., coll toown, So. Calif; partner. (J65) Ass'n, 21 man group; city, million pop., 2 med. schools; E.

ORTHOPEDICS: (K10) Head dept, group staffed by Board men; gen surg. qual. orthopedic surg. elig. (K11) Head dept, new gen'l hosp. serving indus. group; if Board or near cert., $17,000-$20,000; annual increases $1000 for 5 years; So.

PATHOLOGY: (L46) Dir. depts, 2 hosps, 170 and 80 beds, 20 miles apart; res. town near univ. city, So; % or sal. min. $20,000 (L47) Assoc. path; 350 bed hosp; approv. 4 yr. path. res; active teh'g prog; $15,000 to $20,000, increasing to $24,000; lge city, univ. med center, MW. (L48) Path. int. academic career, foreign.

PEDIATRICS: (M22) Head, newly created dept, 6 man group, long estab; coll. town, Pac. NW; early partner. (M23) Ass'n, 2 Board pediatricians; res town near Detroit; partner oppor. (M24) Ass'n, 12 man group; expansion prog; coll. town, Calif; min. $1000; increase after 6 months; full partner after 2 yrs.

PHARMACEUTICAL INDUSTRY: (N1) Assoc med. dir; pref. one trained ped., med. or surg.; Pac. Coast; $15,000.

P & N: (P9) Dir., psy team, private group; $18,000 with oppor. of increasing to $25,000; So. (P10) Board psy; ass'n, med. dept, lge indus. co; hosp. psy, unit averages 40 cases daily; NY (P11) Med. supt; training school, 800 mentally retarded children; $12,800-$14,600; MW.

RADIOLOGY: (R37) Dir., dept, vol. gen. hosp., 300 beds; fee-for-service, averaging $25,000-$35,000; pref one int. teh'g; So. (R38) Chief, 550 bed gen'l hosp; finest equipped dept in state; 2000 examinations mo; lge city, med. center, MW.

STUDENT HEALTH: (T69) Dir. dept, lge univ. SW.

SURGERY: (U91) Gen surg. qual thoracic surg; ass'n Board surg; busy pract; resort city, So. (U92) Surg. to do all surg., small hosp., Kentucky; should average $2000-$3000.

Please send for our Analysis Form.

Burneice Larson DIRECTOR

WANTED — WELL-QUALIFIED GENERAL PRACTITIONER; with surgical experience; for community of 1800 in central Arizona; altitude 5000 feet; no doctor closer than 80 miles in any direction; modern emergency and maternity clinic building under construction will be ready November 20, 1956; equipment on hand to start; resort area with many summer homes, a favorite for fisherman and hunters; County health officer salary available; should gross to start $20,000. Secretary, Payson Clinic, Inc., Payson, Arizona. C

WANTED — ASSOCIATE IN ANESTHESIOLOGY; Board or Board qualified; excellent opportunity in 30 bed, closed staff hospital*+- for clinical anesthesia, and some research if desired; present department consists of MD and 4 nurses; work volume over 5000 cases per year exclusive of OB analgesia; with constantly increasing volume, necessitating expansion of department. For particulars write: J. Morgan Schwab, M.D., Chief of Department of Anesthesiology, Geisinger Memorial Hospital and Foss Clinic, Danville, Pennsylvania. C

PSYCHIATRISTS—OPPORTUNITIES IN INTEGRATED university; state wide treatment, teaching, research program; applications being received for positions in hospitals and clinics associated with Nebraska Psychiatric Institute; openings include clinical director, chief of intensive treatment unit, head of area mental health facility; salaries to $17,000; applicants must have or be eligible for Nebraska license. Apply: Cecil Wittson, MD, Director of Mental Health, 602 South 44th Avenue, Omaha. C

WE'RE GOING "GREAT GUNS"—SO WE NEED AN assistant medical director; here's an opportunity to be on the team of the fastest growing life insurance company in the southwest; wonderful living conditions, beautiful new home office building conveniently located, sound and progressive management; particularly fine opportunity for younger doctor who wants to grow with a company that's really going places; all replies held confidential; write giving details of experience and qualifications, salary expected, etc, Box 1944 C, % AMA.

For the patient who dreads to step on the scales, you can prescribe BIPHETAMINE and be sure of:

PREDICTABLE WEIGHT LOSS. Clinical evidence shows weekly loss of 2 to 3 lbs. in 92 out of 100 cases.

PATIENT COOPERATION because of SINGLE CAPSULE DAILY DOSE.

PRE-DETERMINED 10-12 HOUR APPETITE CURBING action, due to sustained ionic ('Strasionic') release.

In addition, BIPHETAMINE increases work capacity, improves mood—without upsetting normal sleep.

R_x Biphetamine 12½ mg. or Biphetamine 20 mg. capsules containing a mixture of equal parts of amphetamine and dextro amphetamine in the form of a resin complex.

BIPHETAMINE*

*Pat. Pending RESIN

PRE-DETERMINED ANOREXIA
PREDICTABLE LOSS OF WEIGHT

Strasenburgh FOUNDED 1886

For Literature and Samples, write R. J. Strasenburgh Co., Rochester, N.Y., U.S.A.

PHYSICIAN—EASTERN INSURANCE COMPANY DESIRES full time physician preferably about age 35; to supplement staff of 6 doctors; no service obligations; minor handicaps might be considered; experience not essential but helpful; starting salary $10,000; opportunity for advancement; usual fringe benefits including catastrophic medical insurance; teaching hospitals available; only eligible candidates will be answered. Box 1936 C, % AMA.

GENERAL PRACTITIONER—FOR STAFF OF GROUP practice clinic; serving membership of over 20,000 in Washington D. C.; department heads and many other staff members have American Boards; prefer man with 2 years general internship and graduate of grade A medical school; annual salary open; 1 month vacation; study leave; sick leave; comprehensive retirement plan. Write to: Medical Director, Group Health Association, 1025 Vermont Ave., N.W., Washington 5, D. C. C

PHYSICIANS FOR PUBLIC HEALTH — PENNSYLvania has openings for public health administrators, of beginning or advanced grades, in local areas or special fields; appointments under Merit System; there are active training programs, and the State has an established retirement system. Write: C. L. Wilbar, Jr., MD, Deputy Secretary, State Department of Health, Harrisburg, Pennsylvania. C

OPHTHALMOLOGIST — CALIFORNIA; ASSOCIATE long-established Diplomate; recommend in all ways. Continental Medical Bureau, Agency, 510 West Sixth Street, Los Angeles 14. C

NEW MEXICO — ASSOCIATE GENERAL PRACTICE with obstetrics-gynecology Board eligible man; opportunity for future establishment small clinic; salary start; percentage after 6 months; beautiful year-round, sunny, dry, warm southwest city. 5000 feet elevation. Ray C. Bittertich, MD, 142 Truman Avenue, Albuquerque, New Mexico. C

OPENING AVAILABLE FOR ASSOCIATE IN WELLestablished dermatological practice with opportunity for further expansion; well-equipped office; medical center of a prosperous, north central, agricultural and industrial area; give in 1st letter particulars concerning background, training and qualifications. Box 1857 C, % AMA.

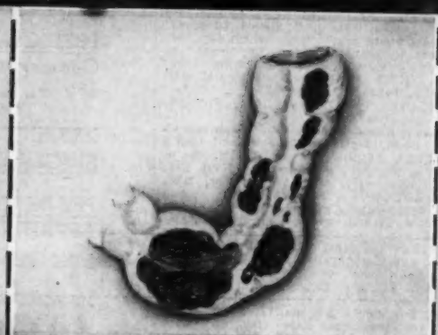
GENERAL PRACTITIONER — CALIFORNIA — MARIN County; preferably with some experience for association established general practitioner; qualified man may do own surgery; own medical building with lab and X-ray; best hospital facilities; salary 1st 6 months. Pacific Coast Medical Bureau, Agency, 703 Market, San Francisco. C

HOUSE PHYSICIAN — NEW, 117 BED HOSPITAL needs licensed physician; duties: assisting in surgery, handling of emergencies; excellent opportunities to learn all specialities; $500 per month plus full maintenance, liberal personnel policies. Contact: Administrator, Western Baptist Hospital, Paducah, Kentucky. C

(Continued on page 50)

DOXINATE®

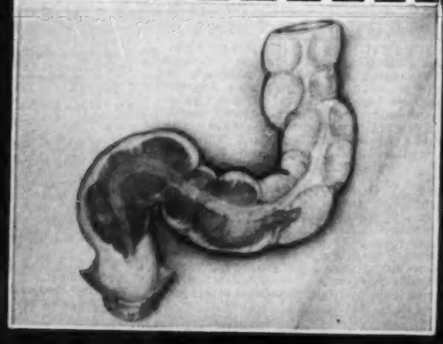
Hard fecal masses



Fecal softening by wetting action

Thorough permeation—well formed stool

Easy evacuation with DOXINATE



New Physiologic Aid in Constipation

DOXINATE®

THE ORIGINAL DIOCTYL SODIUM SULFOSUCCINATE FOR TREATING CONSTIPATION

"...we have been impressed..."*

"Impressive" is, indeed, the word for the entirely new fecal softening action of Doxinate. Doxinate eliminates the primary complication of constipation—hard, dry stools—and eases evacuation by restoring soft, normally formed feces. It is neither laxative, lubricant nor bulk producer.

Two new studies on the action of dioctyl sodium sulfosuccinate found it an effective, well tolerated and easily administered aid to normal colonic function. Antos** called his results with the medication "uniformly good" and Spiesman and Malow* considered it "a very considerable advance in the prevention and treatment of constipation."

Optimum fecal softening is obtained with 2 or 3 capsules (120-180 mg.) a day. Easy passage and improved frequency of movement provide real patient satisfaction. Your patients, too, will benefit from restoration of normal bowel habits with Doxinate, a new physiologic aid in constipation.

*Spiesman, M. G., and Malow, L.: New Fecal Softener (Doxinate) in the Treatment of Constipation, Journal-Lancet 76:164 (June) 1956.

**Antos, R. J.: A New Approach to the Treatment of Severe Constipation, Southwestern Med. 37:236 (April) 1956.

DOSAGE: ADULTS: 2 or 3 capsules daily.
INFANTS: 1 or 2 cc. once daily in milk, formula or fruit juice.

SUPPLIED: DOXINATE CAPSULES: each green transparent capsule contains 60 mg. dioctyl sodium sulfosuccinate—bottles of 30 and 100.

†DOXINATE SOLUTION 5%: each 1 cc. contains 50 mg. dioctyl sodium sulfosuccinate; 60 cc. bottle with dropper calibrated at 1 cc.

†New standard dosage form.

LLOYD
BROTHERS, INC.
Cincinnati 3, Ohio

TONICS AND SEDATIVES *(Continued)*

that old devil sex

During the last war a Back Bay society matron's idea for entertaining a ward of disabled soldiers in a Boston hospital was a speech on the evils of drink by an old gal who had been talking on this subject since Carrie Nation was a girl.

The boys listened unbelievingly at first and a bit sullenly but brightened when the lady worked herself up to fever pitch and shrilled:

"Before I would let a drop of vile liquor pass my lips, I would commit adultery."

From one end of the ward came a quiet voice:

"Who wouldn't, Lady?"

♠

A mill that specialized in parachute silk was caught with a huge inventory on VJ Day. The alert plant manager promptly began converting his stock into thousands and thousands of items of ladies' sheer lingerie.

Just before the first shipment was sent to market, an additional feature was discovered for which it was decided there would be no extra charge.

Across the seat of each garment was printed: "Count ten before you pull the rip cord."

♠

♠

quotes of the week

"Hangover—something to occupy a head that wasn't used the night before."

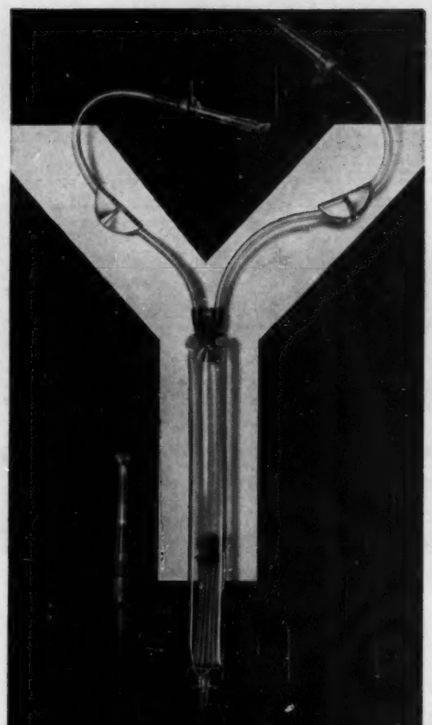
♠

"Dignity is something that can't be preserved in alcohol."

♠

"When a man is no longer anxious to do better than well, he is done for."

(Continued on page 54)



administer blood under pressure... or by gravity

alternately or simultaneously with fluid

Plexitron

R 49 expendable set

with built-in pressure pump

cannot pump air

Now you can switch from gravity to pressure in seconds ...give a pint of blood in four to five minutes simply by squeezing the flexible drip chamber. Set cannot pump air. Return to normal gravity administration at any time.

products of

BAXTER LABORATORIES, INC.

DISTRIBUTED AND AVAILABLE ONLY IN THE 37 STATES EAST OF THE ROCKIES (except in the city of El Paso, Texas) THROUGH

AMERICAN HOSPITAL SUPPLY CORPORATION

SCIENTIFIC PRODUCTS DIVISION
GENERAL OFFICES • EVANSTON, ILLINOIS

(Continued from page 47)

SHAY MEDICAL AGENCY

55 E. Washington Street
Chicago 2, Illinois

Service of Distinction since 1914

ANESTHESIOLOGISTS: (a) East; 300 bed hospital in city of 100,000. (b) MW; 150 bed hospital operated by group of specialists; will be head of dept. 2 well qual. nurse anesthatists. (c) Teaching hospital; ample opp. for teaching and research plus clinical work.

DERMATOLOGISTS: (a) MW; 12 man grp. of qual. spec. $12,000 min. ptnshp. 1 yr. (b) MW; Assoc. 2 board men; city of 50,000; some trng; cert. not req; exc. opp.

GENERAL PRACTICE: (a) Calif; city of 60,000; assoc. with well-estab. G.P. diversified prac; $12,000. (b) Calif; 8 man grp. near S.F. (c) Assoc; Rocky mountain area; good sal. start. (d) 6 man grp. near Wash., D. C.; good sal. start; ptnshp 1 yr. (e) Assoc; genl. & surg. prac; NW; start; ptnshp 1 yr. (f) Assoc; sub. of Chgo. large prac. excel opp. ptnshp. (g) MW; well-known grp; own med. bldg. new; $12,000 1st year, $15,000 2nd. then ptnshp. (h) MW; assoc. well-estab. prac. in city 90,000. $12,000. (i) S; Asst. large genl. prac. minor surg. no O.B. $12,000. (j) Assoc. MW; some surg. & O.B. City of 200,000. $10,000 min. to start. (k) NW; assoc. large prac. mining town of 6000 in resort area. $12,000 start inc. every 3 mo. ptnshp 1 yr.

HOUSE PHYSICIANS: (a) SE; 40 bed hosp; $7200. (b) S; 120 bed hospital in lge. city; assist. surg. $6000. (c) MW; pref. int. in surgery; 75 bed hosp. in large city; $12,000. (d) E; 50 bed hosp; $4200 plus 2 bedroom apt. (e) S; 175 bed hosp; exc. medical staff; $4200 maint.

INDUSTRIAL PHYSICIANS: (a) S; company employs 1200; growing; 5 day wk; priv. prac. if desired; $11,000 start. (b) Calif; large company; supervise in-plant medical facilities. (c) SW; plant employes 2500; work mostly preventative; $10-$12,000. (d) SW; plant employs 6000; modern med. dept; $10,000. (e) E; assoc. with indus. phys; great deal of traumatics; some genl. prac; $12,000.

INTERNISTS: (a) Calif. New Medical grp. near L.A. No invest. Estimate earnings $1000 mo. increase to $3-$4000. (b) Calif. Well est grp. located in highly populated area. $1100-$1200 mo. (c) Chief of Clinical Services with outstanding hosp. grp. $17-$20,000. (d) Well estab. grp, near Chgo. Own air cond. medical bldg. exc. hosp. facilities. $15,000 1st yr. $18,000 2nd. then ptnshp. (e) MW. 5 man grp. opp. for teaching in med. sch. To $12,000. (f) MW. Small grp. in progressive community. Excel hosp. facilities $12-15,000. (g) SW. 4 man grp. own 50 bed hosp. $12,000 minimum. (h) E. Assoc. with board man; large prac. excel. opp. (i) NW. Well est. grp. in city 30,000. New clinic bldg. $12,000 minimum.

OB-GYN: (a) SW; 20 man grp. new med. bldg. in large city. (b) Assoc. with Board man; large prac. near Wash., D. C.; $10,000; ptnshp. 1 yr. (c) MW; well-known grp. city 50,000; $12,000. (d) NW; cert. not nec; well-estab. grp. city 30,000; $12,000. (e) Univ. Med. Sch; faculty pos. teaching and research; priv. pract. perm; $12,000.

OPHTHALMOLOGY: (a) SW; 10 man grp. in city of 65,000; modern clinic bldg; $12,000. (b) Calif; grp. of yng. spec; will be only eye man; $12,000 start. (c) Assoc. with Board man; near Wash., D. C.; excel opp. (d) MW; grp. of 15 men in large city; $15,000 ptnshp. 1 yr. (e) Assoc. with 2 Board men only ones in drawing area 250,000; $15,000.

PATHOLOGY: (a) E; require cert; 350 bed hosp; $15-$20,000. (b) MW; 125 bed hosp; city 30,000; sal. plus can net $30,000. (c) SW; superv. med. spec. of lab. of old estab. clinic, $15,000 min. (d) NW; assoc. 200 bed hosp; city 75,000; $12,000 min.

PEDIATRICS: (a) SW; 10 man grp. growing rapidly; city 65,000; $12,000 start. (b) Calif; assoc. with 4 Board men; large prac; near S. F; $10-$12,000. (c) MW; small grp. in highly populated area; excel. hosp. facilities $12-$15,000. (d) E; assoc. with grp. of 4 internists; near Phila. $12,000. (e) NW; small grp; new clinic bldg. twn. 15,000; drawing area 40,000; $12-$14,000. (f) Pacif. NW; assoc. with Board man; city 50,000; $12,000.

PHARMACEUTICAL: (a) MW; clinical invest; some travel; $10-$12,000. (b) MW; export div; proficiency Span. and French; world travel; $12-$15,000. (c) E; clinical invest; $10,000 min. (d) Med. dir; some clinical invest; primarily admins; to $12,000.

RADIOLOGISTS: (a) MW; active priv. lab; near Chgo; $12-$18,000. (b) MW; assoc. with Board man; well-trained in X-ray diagnosis and isotopes. (c) NE; take over dept. in new 75 bed hosp; $15,000 min. (d) SW; assoc. with Board man; service 3 hosp; trng. in isotopes. (e) NW; 175 bed hosp; new lab; average earnings $2000 mo. (f) E; assoc. Board man; large prac; $15,000 1st yr. 2nd yr. $25,000.

Upon request one of our applications will be mailed to you. Write us today—a post card will do.

GENERAL PRACTITIONER—FOR COMPANY OWNED village in southwest Louisiana; population 1500; permanent salaried position; nurse employed full time; air-conditioned clinic; furnish details of training and experience, references, etc. Write: H W. Mele, Morton Salt Company, Weeks Island, Louisiana. C

WANTED—PHYSICIAN INTERESTED IN PHYSICAL medicine and rehabilitation; to serve as assistant to chief of service (Diplomate of American Board) in large Dean's Committee VA Hospital+; residency in P.M.& R. also available. Apply: Personnel Officer, VA Center, Dayton, Ohio. C

GENERAL PRACTITIONER, WOMAN — FOR MAJOR oil company with extensive Middle East operations; must be U. S. citizens and graduates of accredited medical schools; candidates under 40 years of age preferred; write outlining personal history and work experience. Box 1266 C, % AMA.

OPHTHALMOLOGIST—FOR MAJOR OIL COMPANY with extensive Middle East operations; must be U. S. citizen and graduate of approved medical schools; Board certified; candidates under 40 years of age preferred; write outlining personal history and work experience. Box 1355 C, % AMA.

(Continued on page 54)

recognized, established and substantiated

potent, specific anti-arthritic

BUTAZOLIDIN®

(phenylbutazone GEIGY)

relieves pain • improves function

resolves inflammation

BUTAZOLIDIN being a potent therapeutic agent, physicians unfamiliar with its use are urged to send for literature before prescribing it.

in rheumatoid spondylitis

"Phenylbutazone [BUTAZOLIDIN] shows a dramatically low failure rate in rheumatoid spondylitis. In rheumatoid spondylitis, phenylbutazone is[a] drug of choice and to date the results have been much superior to those secured with X-ray therapy."

Holbrook, W. P.: M. Clin. North America 39: 405, 1955.

GEIGY

GEIGY PHARMACEUTICALS, Division of Geigy Chemical Corporation, New York 36, N. Y.

Announcing

'INVERSINE'

Mecamylamine Hydrochloride

An oral antihypertensive

that is

TOTALLY NEW

CHEMICALLY DIFFERENT

CLINICALLY RELIABLE

The same dose provides the same results...day after day.

'INVERSINE,' a secondary amine, is a new and extremely potent antihypertensive agent. It differs chemically from all other available ganglionic blocking agents and has the following clinically demonstrated properties:

1. *Excellent reproducibility* of effects.
2. *Most potent* of all available oral ganglionic blockers (10 to 20 times more potent than pentolinium and about 90 times more potent than hexamethonium).

3. *Smooth, predictable response:* In a given patient, the same dose of 'INVERSINE' elicits the same blood pressure response, time after time, *with minimal day-to-day fluctuation.*

4. *Remarkable physiologic economy* resulting *in long duration of action, sustained* effect.

5. *Gradual* onset of effect.

6. *Small oral dosage* produces required hypotensive effect.

7. *Effective* even in patients refractory to hexamethonium and other ganglionic blocking agents.

'INVERSINE' differs from all other available ganglionic blocking agents and is, in effect, in a unique category among antihypertensives.

CLINICAL STUDIES

'INVERSINE' has been used by many investigators on thousands of patients. In all this clinical work, this new and very potent agent has amply fulfilled its laboratory promise. By demonstrating reproducibility, high potency and smooth effectiveness with minimal fluctuation—all resulting directly from its complete absorption from the gastrointestinal tract—'INVERSINE' has successfully circumvented many of the objections to the use of ganglionic blockade in hypertension.

In the opinion of one reviewer a "most useful ganglionic blocking agent to be introduced is mecamylamine ('INVERSINE'). . . . This drug is completely absorbed when given by mouth and has such a gradual onset and offset of action that a continuous and effective level of blockade can readily be achieved. . . ."[1]

Further, in one of many clinical trials,† "The over-all response rate was 92%, and 24% of the patients became normotensive."[2] Investigators have found 'INVERSINE' to be ". . . the most potent . . . . of the three drugs in reducing the blood pressure. . . ." ['INVERSINE' and two other ganglionic blocking agents.][2]

Moreover, following ganglionic blockade with 'INVERSINE,' some patients with hypertension may experience relief of preexisting headache and angina pectoris. Many patients with retinopathy, congestive heart failure and electrocardiographic abnormalities, have shown signs of improvement during treatment with 'INVERSINE.'

'INVERSINE' was thus shown to be a most valuable agent in the management of hypertensive vascular disease.

SIDE EFFECTS

'INVERSINE' (mecamylamine) is a very potent agent which must be used with care. Side effects observed during clinical use are due to excessive pharmacologic action. They may be minimized by careful adjustment of dosage and close supervision of the patient.

☆ ☆ ☆ ☆ ☆ ☆

Judged by any standard 'INVERSINE' (mecamylamine) is a most satisfactory agent in the treatment of hypertension by ganglionic blockade. It is the most potent oral agent for the management of hypertension.

References:

1. Sturgis, C. C., et al.: Advances in Internal Medicine, J. Michigan M. Soc. *55*: 154 (Feb.) 1956.
2. Moyer, J. H., et al.: Drug Therapy of Hypertension: Preliminary Observations on the Clinical Use of Mecamylamine (A Ganglionic Blocking Agent) in Combination with Rauwolfia for the Treatment of Hypertension, Med. Rec. & Ann. *49*: 390 (Sept.) 1955.

†In this clinical trial all patients were given, in addition to one of the ganglionic blocking agents, a constant daily amount of reserpine.

'INVERSINE' is the trademark of Merck & Co., Inc.

MERCK SHARP & DOHME

DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

Is your Reading Piling up?

LINDE can help you keep abreast of developments in oxygen therapy.

OXYGEN THERAPY NEWS brings you a monthly review of current articles on the use of oxygen in medicine—and it's just a single page. If you are not already receiving this time-saving publication, merely fill out and return coupon below.

LINDE AIR PRODUCTS COMPANY
A Division of
Union Carbide and Carbon Corporation
Oxygen Therapy Department
30 East 42nd Street, New York 17, N. Y.

Please add my name to the complimentary mailing list for OXYGEN THERAPY NEWS.

_____ M.D.
Name

_____
Street

_____
City

_____
Zone State

TONICS AND SEDATIVES *(Continued)*

The man in the barber shop signaled with his finger.

"Got another razor?" he whispered.

"Why?" asked the barber.

"I'd like to defend myself," said the customer.

♠

At a luncheon of wives of Hollywood producers, one wife arrived literally dripping with diamonds.

"Aren't they beautiful!" gasped the visitor from New York.

The hostess shrugged. "Last year's jewels."

♠

The lady of the house heard a crash in the kitchen.

"More dishes?" she asked the maid with an air of resignation.

"No, Ma'am," came the voice of the maid. "Less."

♠

A Hollywood ham, witness in an accident case, described himself as the greatest actor since Booth.

"Modest, aren't you?" laughed the judge.

"Ordinarily, yes," said the ham. "But please remember that I am now under oath."

—D. D.

(Continued from page 50)

RADIOLOGIST—FOR MAJOR OIL COMPANY WITH extensive Middle East operations; must be U. S. citizen and graduate of accredited medical schools; must be Board certified; candidates under 40 years of age preferred; write outlining personal history and work experience. Box 1313 C, % AMA.

PHYSICIAN URGENTLY NEEDED—VILLAGE OF DeKalb, New York; 100 miles from Montreal, 125 miles from Syracuse; hospital privileges available to qualified man; many advantages. Write: Leon Bennet-Alder, Administrator, North Country Hospitals, Gouverneur, New York. C

RADIOLOGIST—IMMEDIATE OPENING; OHIO VALley; unusual opportunity; associate with 2 radiologists; 500 bed hospital; all new equipment with rotational cobalt; prefer man with strong therapy interest; excellent income level 1st year rapidly leading to full partnership. Box 1938 C, % AMA.

GENERAL PRACTITIONER — WISCONSIN RURAL; liberal salary; partnership after 1 year; new 12 room clinic; new equipment including X-ray, diathermy, hydrotherapy, complete laboratory with a registered technician on duty; air conditioning; 25 minutes from new multimillion dollar hospital. Box 1692 C, % AMA.

ORTHOPEDIST—CALIFORNIA; JOIN 8 MAN GROUP; all Diplomates and Mayo trained, exception of two; choice Bay area community, near University Center; hospital 2 blocks from clinic; salary to start, partnership opportunity. Pacific Coast Medical Bureau, Agency, 703 Market, San Francisco. C

SOUTH CENTRAL FLORIDA — GENERAL PRACTItioner wanted; to take over office of retired doctor; fully-equipped 6 room office, including intact patient records and accounts receivable; rent $50 per month. For details contact: A. L., 67 N. Ridgewood, Sebring, Florida. C

INTERNIST — COASTAL COMMUNITY NEAR SAN Francisco; join two man department of 7 man group; own new medical building; 1st year salary, then full partnership; excellent hospital connections. Pacific Coast Medical Bureau, Agency, 703 Market, San Francisco. C

ASSISTANT IN GENERAL PRACTICE — MARRIED man preferred; salary $12,000 a year then partnership or percentage; must be licensed in Minnesota or a state that reciprocates with Minnesota, or has National Board license; partnership after 1 year. Box 1922 C, % AMA.

98 BED GENERAL HOSPITAL NEEDS HOUSE PHYsician now—to assist in surgery and handling emergencies; eligible for Texas licensure; $350 per month plus full maintenance. Write or Call: Administrator, Bethania Hospital, Wichita Falls, Texas. C

WANTED — GENERAL PRACTICE ASSOCIATE; young man preferred with Pennsylvania license; to assist physician doing general practice and surgery who has recently had coronary attack; location southeastern Pennsylvania. Box 1935 C, % AMA.

FOUNDATION NEEDS PHYSICIAN—TO HANDLE Research program and other administrative duties; New York City, $12,500-$14,000. New York Medical Exchange, 489 Fifth Avenue, New York City, Patrician Edgerly, Director. C

WEST COAST MEDICAL COUNSELLORS
821 MARKET STREET
SAN FRANCISCO 3, CALIFORNIA

SPECIALISTS IN MEDICAL PLACEMENT
CALIFORNIA—OREGON—WASHINGTON

Outstanding opportunities. General Practitioners and Board Specialists qualified to Head Departments, Associations • Group Clinics • Hospitals • Industrial
Please write for an Analysis Form so we may prepare an individual survey for you. No registration fee.
STRICTLY CONFIDENTIAL

(Continued on page 56)

Reports of Clinical Studies

1. "I have used meprobamate in my general psychiatric practice since April, 1955, and believe it to be [a] drug of choice for relief of tension, anxiety and insomnia."

Lemere, F.: Northwest Med. **54:** *1098, 1955.*

2. ". . . the patient [taking Miltown] never describes himself as feeling detached or 'insulated' by the drug. He remains . . . in control of his faculties, both mental and physical, and his responsiveness to other persons is characteristically improved."

Sokoloff, O. J.: A.M.A. Arch. Dermat. In press.

3. "Of special importance is the fact that Miltown does not appear to affect autonomic balance—which in alcoholics is often unstable . . ."

Thimann, J. and Gauthier, J. W.: Quart. J. Stud. Alcohol. **17:** *19, 1956.*

4. "The [relative] absence of toxicity, both subjectively and objectively, is an important feature in favor of Miltown. In addition, there were no withdrawal phenomena noted on cessation of therapy, whether it was withdrawn rapidly or slowly."

Borrus, J. C.: J.A.M.A. **157:** *1596, 1955.*

5. "Miltown is of most value in the so-called anxiety neurosis syndrome, especially when the primary symptom is tension . . . Miltown is an effective dormifacient and appears to have . . . advantages over the conventional sedatives except in psychotic patients. It relaxes the patient for natural sleep rather than forcing sleep."

Selling, L. S.: J.A.M.A. **157:** *1594, 1955.*

Miltown®

THE ORIGINAL MEPROBAMATE

DISCOVERED AND INTRODUCED by Wallace Laboratories, New Brunswick, N. J.

2-methyl-2-*n*-propyl-1,3-propanediol dicarbamate—U. S. Patent 2,724,720

Announcing

THE BURDICK

UT-4 ULTRASONIC UNIT $395

This new addition to the Burdick line fulfills the busy practitioner's need for a compact, high-quality ultrasonic unit at a moderate price.

Weighing only 25 pounds, the Burdick UT-4 Ultrasonic unit has an effective maximum intensity of 2½ watts per sq. cm. and an irradiating surface of 6 sq. cm., with 15 watts total output. Complete unit measures only 9" x 12" x 16".

Its right-angle applicator assures ease and convenience, and the 6-foot flexible cable gives the operator ample freedom of movement. A Receptor switch permits pre-setting intensity before starting treatment.

Built in accordance with the recommendations of the American Standards Association, the UT-4 carries the type-approval no. of the F.C.C. and is listed by the Canadian Dept. Transport and Underwriters' Laboratories.

Ask your Burdick dealer for a demonstration in your office, or write us for information.

THE BURDICK CORPORATION — **MILTON, WISCONSIN**

OUR 60TH YEAR

WOODWARD

Medical Personnel Bureau

FORMERLY AZNOE'S

3rd floor • 185 N. WABASH AVE. CHICAGO • 1

• ANN WOODWARD • *Director*

Founders of the counseling service to the medical profession, serving medicine with distinction over half a century

ANESTHESIOLOGY: (p) Head dept, new gen'l hosp 300 beds; fee basis or %; So.

GENERAL PRACTICE: (b) GP, pref able give anes; assn, 4 surgs, 6 internists; $12,000; opper specialize; excel twn nr med schl; NY State. (c) Assn 22 man grp est as prtnrshp '48; $12,000 1st yr, $15,000 2nd, then prtnr; Chgo area. (d) GP Assn, 3 GP's & Surg; $12,000 & %; coastal city, lge size nr Los Angeles. (e) Assn new grp serv'g indus organ, $12,000; increases; So.

INDUSTRIAL MEDICINE: (w) New indus cl founded by Bd ortho; $12,000 & priv pract; suburb of Chgo. (y) 2 indus phys; 2 fairly new plants; maj Co; vicinity Birmingham, Ala & Pensacola, Fla; $10-$12,000

INTERNAL MEDICINE: (w) Assn 20 Bd or elig men; own hosp; oppor research, teach; $15,000 increas'g $25,000; bonus; prtnrshp; lge city, 2 med schls; MW. (a) Assn w/Johns Hopkins, Bd Internist, FACP; busy pract, attrac twn on Hudson River; short dis NYC (b) Assn, prtnrshp grp, 13 men, serv'g as closed staff of 3 corp hosps (150 beds) So; $12-$15,000; increases; full prtnrshp, So.

OALR: (o) Dipl, OALR; grp assn; shld net $25-$30,000 1st yr; MW. (p) Oto, hd dept; new post; 8 man grp expnd'g to 12 men; lge coastal city; So. Calif. (q) Oph; hd dept, new grp serv'g indus organ; if Bd, $18-$24,000; South.

OB-GYN: (r) Asst or assoc professor; med schl & new 500 bd med center; $10-$15,000. (s) Assn 25 man prtnrshp grp; own 180 bed hosp; $16,000 net 1st yr; early prtnr; twn 30,000; SE. (u) Hd dept, 4 man grp est 10 yrs; own 25 bd hosp excel facil, $12,000; bonus; early prtnrshp, PacNW.

ORTHOPEDICS: (h) Dipl or elig; dir dept; grp 10 Dipls, estab '20; outstand'g facil, serv'g lge area; opper $15-$20,000; NW. (i) Assn, 35 man grp; $15-$20,000 1st yr; research; nr univ teh'g entr; E.

PATHOLOGY: (w) Dir dept 450 bd gen hosp expanding to 500 bds; approv'd med tech course; affil univ & coll; oppor choosing own assoc; city 100,000, MidE. (x) To replace present dir leaving for tchg post; fully apprvd 250 bd hosp; tchg prog; excel equipd dept; oppor $25-$30,000, lge univ city.

PEDIATRICS: (x) Assn, 12 man grp; $15-$18,000; resort twn, $25,000; Minn. (y) Assn 25 man grp est '46; NY State (z) Assn impor childrens cl owned by Bd men all on med schl faculty; $10-25,000; lge city; central, recommended.

P&N: (z) Psy; Dipl; cl dir, mental hosp; tch res & oppor univ faculty appt; $10-$15,000; full mtce. (b) Psy; assn 2 Bd NPs; tremendous pract in area 400,000; $16,000 1st yr then prtnr; MW.

RADIOLOGY: (y) Dir radio-therapy & serve as assoc w/Prof & Chrman, dept rad in diagnosis; impor med schl; rank depend'g on qual. (z) Dir dept; genl hosp 250 bds; tchg prog; twn 60,000, vicinity Pgh., Pa.

SURGERY: (k) Dipl, gen surg & pref Bd elig in Thoracic surg; assn outstand'g grp 11 specialists (8 Dipls) much sought after area; Fla; recommended. (l) Approved res; Pa, lic reqd; $500; possibly more. (n) Assn 8 Bd men; $12-$15,000, Ohio.

PLEASE SEND FOR AN ANALYSIS FORM SO WE MAY PREPARE AN INDIVIDUAL SURVEY FOR YOU

We offer you our best endeavors—our integrity—our 60 year record of effective placement achievement

STRICTLY CONFIDENTIAL

WANTED — OPHTHALMOLOGIST; TO ASSOCIATE with Board certified ophthalmologist; busy practice California; partnership following trial period. Box 1932 C, % AMA.

PATHOLOGIST—BOARD CERTIFIED OR ELIGIBLE; for association with pathologic group in Los Angeles area. 141 N. Prairie Ave., Inglewood, California. Orchard 7-8105. C

ANESTHESIOLOGIST—FOR LARGE MID-WEST MUnicipal hospital system; serve as director of anesthesiology; salary open. Box 1934 C, % AMA.

INDUSTRIAL PHYSICIAN — YOUNG; NEW JERSEY license; $10,000. New York Medical Exchange, 489 Fifth Avenue, New York City, Patricia Edgerly, Director. C

WANTED — BOARD QUALIFIED OBSTETRICIAN-Gynecologist; splendid opportunity in 10 man Iowa group with liberal starting salary and eventual partnership. Box 1867 C, % AMA.

WANTED—RETIRED PATHOLOGIST; WITH CALIfornia license; interested in cytology; laboratory represents group effort for screening purposes. Box 1773 C, % AMA.

WANTED — GENERAL PRACTITIONER TO TAKE over practice in growing industrial and agricultural area of West Virginia; office, equipment and records available; $2-$3000 per month gross. Box 1669 C, % AMA.

EXPERIENCED OPHTHALMOLOGIST—BOARD CERTified; needed to head department; large eastern clinic. Apply to: Box 1616 C, % AMA.

WANTED—ASSOCIATE IN GENERAL AND TRAUmatic surgery; Chicago, Illinois. Box 1557 C, % AMA.

WANTED IMMEDIATELY—RESIDENT HOUSE PHYsician; grand opportunity for young man who has just completed his internship or residency; general hospital, 154 beds and organized medical staff, 50 physicians; applications accepted for 1 year or longer as individual desires; starting salary $3,200 per annum; desirable opening with close association with medical profession of community; applicants from Exchange Visitor Program cannot be accepted. Apply: Matthew I. Barron, Director, Portland City Hospital, Portland, Maine. Interview granted at applicant's convenience. C

(Continued on page 58)

(Continued from page 54)

WANTED — ASSOCIATE TO OPHTHALMOLOGIST; with opportunity to take over practice after 6 months, in U. S. Mid-East; salary up to $1000 per month if qualified; give qualifications and references. Box 1923 C, % AMA.

WANTED — TWO YOUNG, ENERGETIC GENERAL practitioners with surgical experience; to work as a team in small northeast Kansas town; rich farming territory; new hospital under construction. Community Hospital, Benton Luse, Axtell, Kansas. C

OTOLARYNGOLOGIST — POTENTIAL PARTNERSHIP offered, should 1 year employment period prove satisfactory to both parties; salary during employment commensurate with experience and qualifications. Box 1943 C, % AMA.

INDUSTRIAL PHYSICIAN — EXPERIENCED; UPstate New York; $10,000-$12,000. New York Medical Exchange, 489 Fifth Avenue, New York City, Patrician Edgerly, Director. C

OTOLARYNGOLOGIST — CALIFORNIA; OUT OF THE smog and fog; excellent smaller group offering future partnership. Continental Medical Bureau, Agency, 510 West Sixth Street, Los Angeles 14. C

WANTED—GENERAL PRACTITIONER; TO BUY OR lease 7 room, modern, equipped office; large practice, gross $40,000; wealthy modwest valley; leaving to specialize. Box 1930 C, % AMA.

OTOLARYNGOLOGIST — WASHINGTON STATE; start $15,000 partnership 2 years; good location. Continental Medical Bureau, Agency, 510 West Sixth Street, Los Angeles 14. C

ASSOCIATE IN ST. LOUIS GENERAL PRACTICE — $1,000 per month to start, excellent future; must be A graduate; state qualifications in 1st letter. Box 1928 C, % AMA.

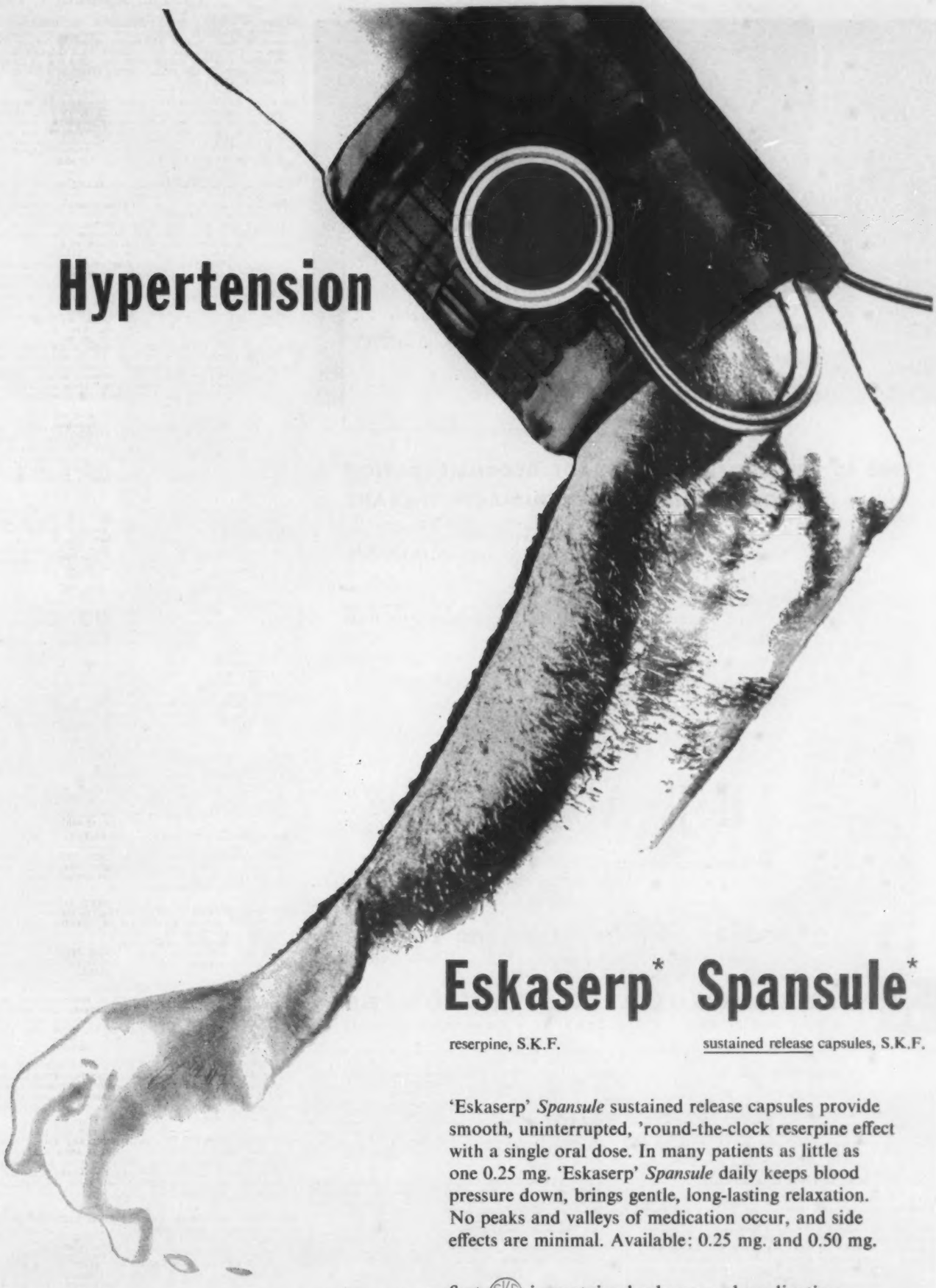
UNUSUAL OPPORTUNITY—BUSY GENERAL PRACtice in rural Colorado; fine local hospital, excellent income; most liberal terms on equipment; leaving for specialty training June 1957. Box 1929 C, % AMA.

WANTED—ASSOCIATE RADIOLOGIST; IN PRIVATE office and hospital practice; Southeast; excellent opportunity for early partnership; state all qualifications and particulars in 1st letter. Box 1941 C, % AMA.

WANTED — GENERAL PRACTITIONER; THICKLY populated area near hospitals; office equipment for rent or sale; discontinued practice because of illness; will introduce. Box 47, Lumberport, West Virginia. C

DIRECTOR OF HEALTH—FOR THE CITY OF WATERbury, Connecticut; must have degree and experience in public health administration and be eligible for Connecticut licensure. C

PATHOLOGIST—FOR LARGE MID-WEST MUNICIPAL hospital* + system; serve as director of laboratories and of 4 year approved training program; salary open. Box 1933 C, % AMA.



Hypertension

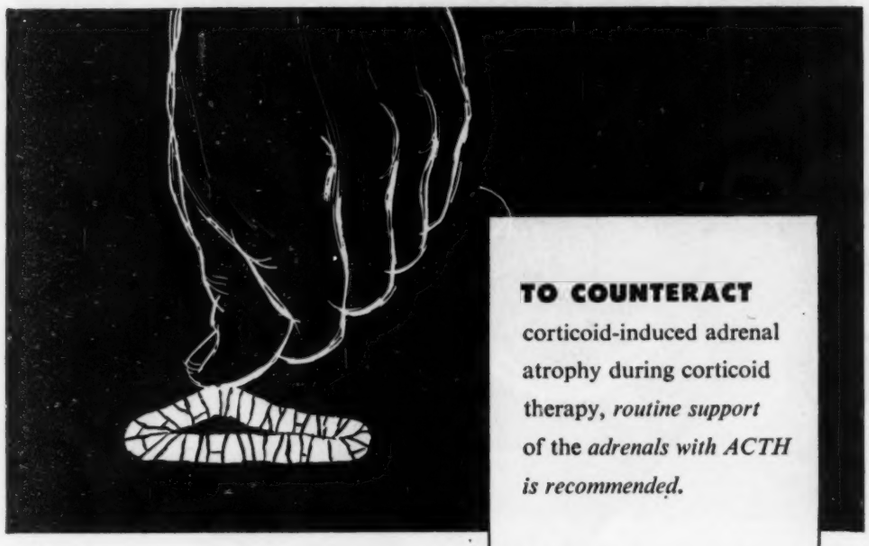
Eskaserp* Spansule*

reserpine, S.K.F. sustained release capsules, S.K.F.

'Eskaserp' *Spansule* sustained release capsules provide smooth, uninterrupted, 'round-the-clock reserpine effect with a single oral dose. In many patients as little as one 0.25 mg. 'Eskaserp' *Spansule* daily keeps blood pressure down, brings gentle, long-lasting relaxation. No peaks and valleys of medication occur, and side effects are minimal. Available: 0.25 mg. and 0.50 mg.

first SKF in sustained release oral medication

*T.M. Reg. U.S. Pat. Off. Patent Applied For.



TO COUNTERACT
corticoid-induced adrenal atrophy during corticoid therapy, *routine support* of the *adrenals with ACTH is recommended.*

THIS IS THE PROTECTIVE DOSAGE RECOMMENDATION FOR COMBINED CORTICOID-ACTH THERAPY

- When using *prednisone* or *prednisolone:*
for every 100 mg. given, inject approximately 100 to 120 units of Highly Purified ACTHAR *Gel.*
- When using *hydrocortisone:*
for every 200 to 300 mg. given, inject approximately 100 units of Highly Purified ACTHAR *Gel.*
- When using *cortisone:*
for every 400 mg. given, inject approximately 100 units of Highly Purified ACTHAR *Gel.*

Discontinue administration of corticoids on the day of the Highly Purified ACTHAR *Gel* injection.

HIGHLY PURIFIED ACTHAR® *Gel* (IN GELATIN)

The Armour Laboratories brand of purified adrenocorticotropic hormone—corticotropin (ACTH)

✓ **UNSURPASSED IN SAFETY AND EFFICACY**
More than 42,000,000 doses of ACTH have been given

THE ARMOUR LABORATORIES
A DIVISION OF ARMOUR AND COMPANY • KANKAKEE, ILLINOIS

(Continued from page 56)

MEDICAL OFFICER—GLENN DALE HOSPITAL, THE tuberculosis hospital for the District of Columbia; salary $9000 to $10,300 per annum depending on qualifications; sick leave, annual leave, and retirement benefits; satisfactory completion of 1 year of approved residency in pulmonary diseases or internal medicine, or comparable experience required; must be eligible for licensure in District of Columbia; outpatient clinic service connected with hospital. Address inquiries to: Medical Director, Glenn Dale Hospital, Glenn Dale, Maryland. C

STAFF PHYSICIAN AND/OR CHIEF, PHYSICAL medicine rehabilitation service—for 250 bed tuberculosis hospital+, 25 miles to Kansas City via 4-lane highway; affiliated with University of Kansas Medical School; starting salaries range from $5915 to $11,610 annually, depending on qualifications; experience and Board certification in tuberculosis desired but not required; citizenship required; housekeeping quarters available at reasonable rental. Write: Manager, Veterans Administration Hospital, Excelsior Springs, Missouri. C

PATHOLOGIST—TO DIRECT CLINICAL LABORATORY in 3000 bed psychiatric hospital+ located 45 miles from New York City, only 15 minutes from seashore resorts; approximately 150 autopsies performed yearly; require Board Diplomate license to practice in New Jersey; salary $10,200 with $600 yearly increments to $13,200. Apply: Medical Director, New Jersey State Hospital at Marlboro. C

GENERAL PRACTITIONER—FOR ASSISTANT COUNty physician; unlimited opportunity to practice in a 350 bed hospital, general medical and surgical; starting salary $10,000 yearly; a 3 bedroom home may be available on the hospital grounds; a California license and citizenship is required; the climate in northern California coastal, and the area is one of lumbering and sportsmans vacationland; an excellent future awaits the doctor who wishes to be busy in general practice. Box 1713 C, % AMA.

ANESTHESIOLOGISTS—THREE FULL TIME SENIOR positions available for anesthesiologists in University Hospitals*+ of Cleveland, Ohio, in September and December, 1956; opportunities for clinical anesthesia, resident and medical student teaching and research in this developing department, now operated by a group of 10 physician anesthesiologists. Interested applicants write to: Robert A. Hingson, MD, Director, Department of Anesthesia, University Hospitals of Cleveland, 2065 Adelbert Road, Cleveland 6, Ohio. C

PATHOLOGIST—VA HOSPITAL+, HINES, ILLINOIS, has vacancy for full-time Board eligible or certified pathologist in very active large general hospital; must be U. S. citizen; salary dependent on qualifications up to $13,760; clinical laboratory equipped with finest and latest instruments if interest lies in clinical pathology; will assist in teaching the pathology, surgical and medical residents in the department. Apply: Director, Professional Services, V. A. Hospital, Hines, Illinois. C

WANTED—FULL TIME HEALTH OFFICER; FOR central California County; new building well-staffed; position open August 15; salary range @ 741 to 888 month; applicant must be a citizen and California Board eligible, also he should have had training in public health work. Write: Kings County Board of Supervisors, Hanford, California. C

BOARD ELIGIBLE INTERNIST—FOR FLORIDA State Tuberculosis Hospitals; rapidly developing program with opportunities for advancement; beautiful hospitals; furnished houses available; liberal retirement and other benefits; salary dependent upon qualifications. Write: Roberts Davies, MD, Director, State Tuberculosis Board, P. O. Box 286, Tallahassee, Florida. C

WANTED — OBSTETRICIAN-GYNECOLOGIST; MUST be young male; well-trained, Board certified or Board eligible; interested in a full-time salaried appointment as associate on OB-GYN staff of 300 bed general hospital*+ and large new clinic building. Write to: R. E. Nicodemus, MD, Geisinger Memorial Hospital, and Foss Clinic, Danville, Pennsylvania. C

WANTED—PHYSICIAN; GRADUATE OF APPROVED medical school with psychiatric training or experience; for State mental hospital in Pacific Northwest; salary range $6840 to $8700 plus family maintenance including attractive house; sick leave, paid vacation and retirement plan; easy access to varied scenic and recreation areas. Box 1919 C, % AMA.

WANTED—PSYCHIATRIST; TO SERVE AS CLINICAL director State Hospital+ Ohio; U. S. citizenship and eligibility Ohio license required; Board in psychiatry required; salary attractive; new house available nominal rent; excellent schools, churches and shopping facilities. Write: Superintendent, State Hospital, Massillon, Ohio. C

WANTED—YOUNG GENERAL PRACTITIONER; TO join family medicine section of 4 man clinic, 30 miles Southwest Chicago; will rotate house calls, evenings, and weekends; attractive starting salary, with periodic raises; early partnership available if mutually satisfactory. Write: Clinic Manager, Hedges Clinic, Frankfort, Illinois. C

ANESTHESIOLOGIST, MD — WANTED IMMEDIately; for VA Hospital+ with very active surgical service; resident training program in surgery; affiliated with Johns Hopkins Hospital and University of Maryland Medical School; salary according to experience with bonus of 25% for Board diplomates. For further inquiries contact: Manager, VA Hospital, Perry Point, Maryland. C

WANTED—PHYSICIAN INTERESTED IN INTERNAL medicine; new ultra modern 100 bed GM&S hospital; modern 2 bedroom apartment available; salary up to $14,000 depending upon qualifications; our chiefs of medicine and surgery are both Board men. Apply: M. J. Robertson, MD, Manager, Veterans Administration Hospital, Miles City, Montana. C

WANTED—FOR ACTIVE GROUP PRACTICE CLINIC and 35 bed hospital; 1 general practitioner with anesthetic experience and 1 Board eligible otolaryngologist; to participate in expanding practice; unopposed access to 50,000, rapidly expanding, population in eastern industrial community; Pennsylvania license required. Box 1844 C, % AMA

PSYCHIATRIST-DIRECTOR — WITH QUALIFIED training in child psychiatry; in a well-established mental hygiene clinic; member AAPCC; diagnostic, therapeutic and training program with multi-discipline approach; 30 miles from New York; salary $12,000-$15,000. Apply: Dr. Archie Crandell, Medical Superintendent, Greystone Park, New Jersey. C

GENERAL PRACTITIONER—MAYO, MARYLAND; TEN miles from Annapolis General Hospital; near beach resorts, prosperous farms; area population 3000; doubles in summer; excellent prospects, pleasant surroundings; local doctor retired. Write: Mrs. Ruby F. Reid, Mayo Community & Recreation Association, Mayo, Maryland. C

GENERAL PRACTITIONER — TO ASSOCIATE WITH established general practitioner in New Orleans; ample hospital, post-graduate, cultural, recreational facilities; attractive financial arrangement with early partnership; give all details 1st letter. P. O. Box 1098, New Orleans, Louisiana. C

WANTED—PHYSICIAN; GENERAL PRACTICE INdustrial hospital and clinic for 2 large mining companies; office furnished; $729 per month with privilege of private practice plus extra on insurance basis; give personal and professional data in 1st letter. Box 1296, Miami, Arizona. C

EXCELLENT OPPORTUNITY—FOR PHYSICIAN INterested in becoming established 50 miles from Chicago as an assistant to a general practitioner; must qualify for AMA membership; starting salary $700 per month; opportunity for partnership if mutually satisfactory. Box 1832 C, % AMA.

WANTED—ASSOCIATE RADIOLOGIST; IN A MIDwestern clinic and hospital+; good starting salary; pension and retirement plan; applicant must have Boards or be Board eligible; interest in residency training is desirable for the hospital approved for 3 year radiology residency. Box 1861 C, % AMA.

WANTED—GENERAL PRACTITIONER INTERESTED in practicing good medicine; to join 7 man group in small community in heart of scenic West; regular vacation and post-graduate study time; net approximately $12,000 1st year; send particulars 1st letter. Box 1888 C, % AMA.

PSYCHIATRIST — CERTIFIED OR EXPERIENCED; private sanatorium, 50 beds; office practice and consultations; experience in institutional management would be desirable but not necessary; Southwest; salary anticipating partnership; good opportunity. Box 1804 C, % AMA.

(Continued on page 66)

NEW
ELASTIKON®
ELASTIC ADHESIVE TAPE
now individually boxed in 2", 3" and 4" widths
• woven cotton elastic backcloth
• easy to unwind
• excellent quick-stick
• close-fitting support
ELASTIKON
ELASTIC ADHESIVE TAPE
Johnson & Johnson
Johnson & Johnson
© J&J 1956

"Delight," painted by Norman Rockwell to show baby's enjoyment of Swift's smoother meats.

Swift's new smoother meats are easy to enjoy...easy to digest!

• The smoother the first "solids," the better baby likes them.

That's why we've developed a special new process that makes Swift's Meats for Babies the smoothest ever. You can recommend them. Now they're strained creamy-soft . . . so fine they feel like velvet on baby's delicate tongue. They're easy to swallow, digestible as milk.

Flavors are improved, too. They're more palatable . . . naturally *good*. And, most important, we make sure the high nutritional values of these fine 100% meats are carefully retained.

All 8 varieties of Swift's Meats for Babies and Swift's Egg Yolks are made to merit your confidence. They're our most precious product.

MEATS FOR BABIES

Swift's most precious product

Swift
101ST YEAR

To Serve Your Family Better

From the Literature

"... [a] most effective antihypertensive agent...."[1]

"... a simple and [well-tolerated] regimen for the ambulatory management of hypertensive patients."[2]

"... reduction of the blood pressure may be achieved in substantially all forms of hypertension."[3]

"... possible in most patients to get a good control over blood pressure levels with comparatively few side-effects."[4]

"... significant falls ... occurred in systolic and diastolic blood pressure. ... The cardiac, retinal and coronary status of all patients was improved."[5]

1. Moser, M.: New York State J. Med. **55**:1999 (July 15) 1955. 2. Agrest, A., and Hoobler, S.W.: J.A.M.A. **157**:999 (March 19) 1955. 3. Smirk, F.H.: Am. J. Med. **17**:839 (Dec.) 1954. 4. Smirk, F.H., and McQueen, E.G.: J. Chron. Dis. **1**:516 (May) 1955. 5. Waldman, S., and Pelner, L.: Am. J. M. Sc. **231**:140 (Feb.) 1956.

ANSOLYSEN

TARTRATE

Pentolinium Tartrate

Lowers Blood Pressure

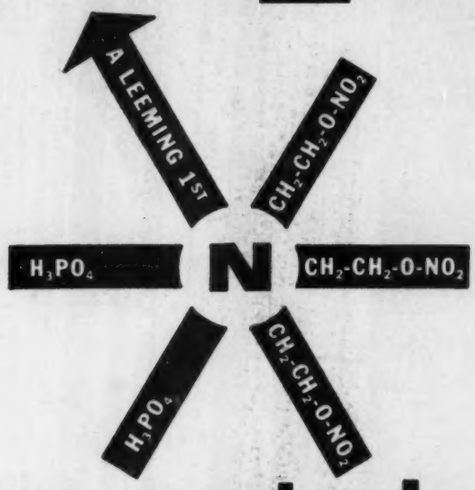
Wyeth

Philadelphia 1, Pa.

Metamine®

triethanolamine trinitrate biphosphate, LEEMING, tablets 2 mg. Bottles of 50 and 500
Dose: 1 or 2 tablets after each meal and at bedtime.

smallest dose **low toxicity** **unique amino nitrate**



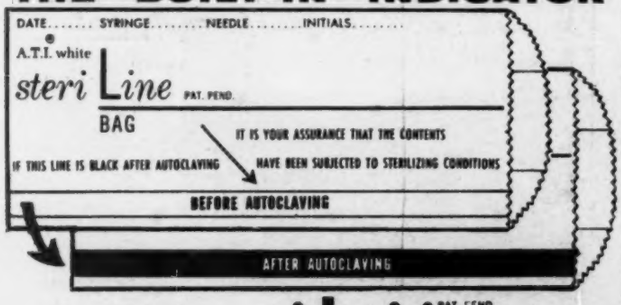
protects 8 out of 10 patients against angina pectoris

Thos. Leeming & Co., Inc., 155 East 44th Street, New York 17, N. Y.

Proven by Performance - Adopted as a 'STANDARD

the sterilizing bag with

THE "BUILT-IN" INDICATOR



A.T.I. steriLine® PAT. PEND. BAG

The steriLine Bag, in just two short years, is already established as a *"Standard"* by thousands of hospitals! There's good reason—the heavy duty, high wet-strength, steriLine Bag saves you time and insures safe, sterile handling of your instruments. Plus, the "steriLine Indicator" provides you indication as to whether contents of the bag have been autoclaved. This "built-in" indicator changes color from white to black only after proper sterilizing conditions of time, steam and temperature have been achieved. Use steriLine Bags as thousands of hospitals are now doing.

SEND FOR FREE SAMPLES AND PRICES

Aseptic-Thermo Indicator Company JAMA 9
11471 Vanowen St., North Hollywood, Calif.
Please send free steriLine Bag samples and prices.
Name_____ Title_____
Hospital_____
Address_____
City_____ Zone____ State_____

"Before I start talking, there's something I want to say . . ."

in rheumatoid arthritis

"A good therapeutic response was obtained in...

73 per cent of those with rheumatoid arthritis alone."

Danforth, C. W., Rumi, D., and Bonacorsi, D. M.:
Am. Pract. & Digest. Treat. 6:1865, 1955.

potent, specific anti-arthritic

BUTAZOLIDIN®

(phenylbutazone GEIGY)

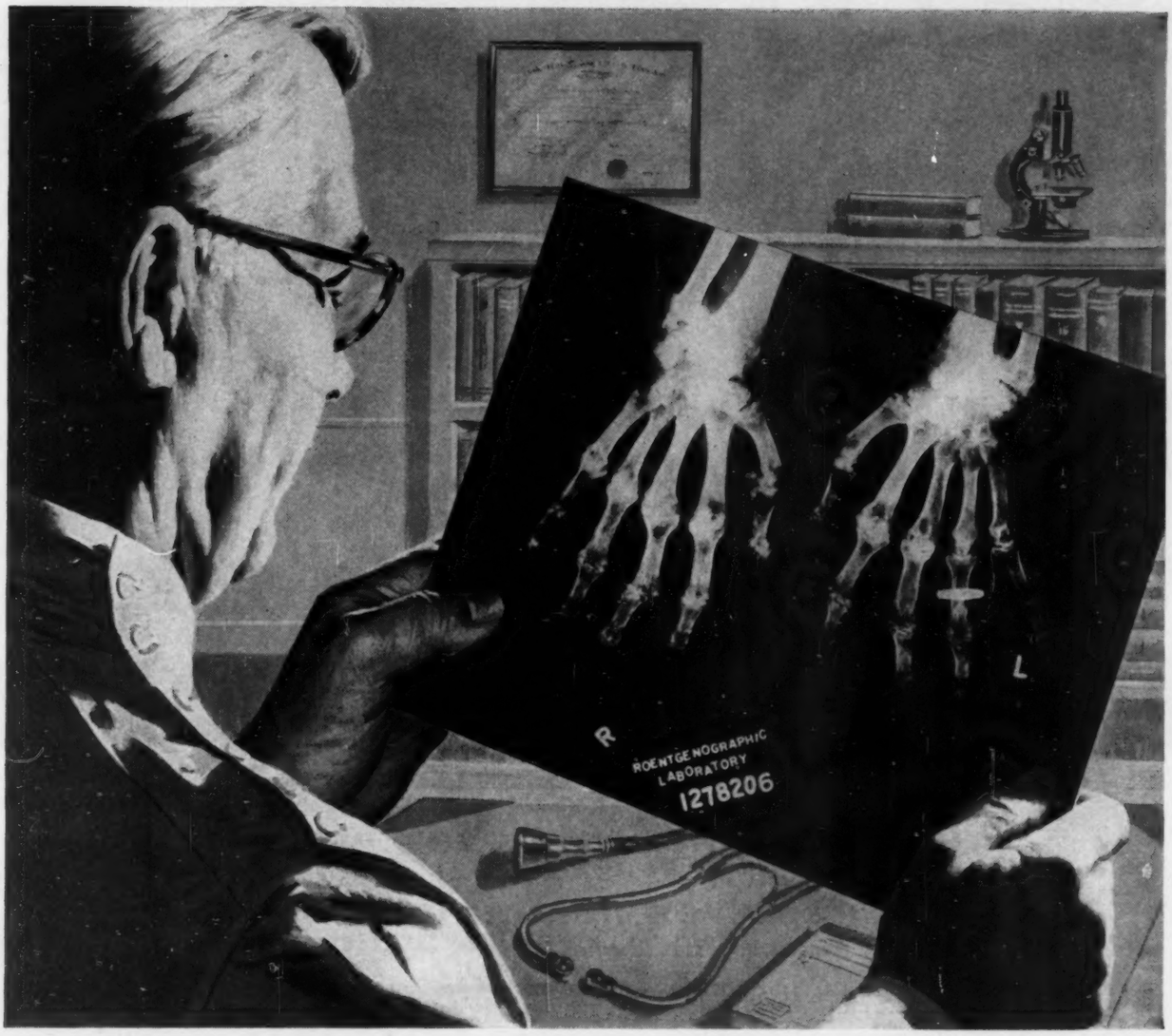
relieves pain • improves function

resolves inflammation

BUTAZOLIDIN being a potent therapeutic agent, physicians unfamiliar with its use are urged to send for literature before prescribing it.

recognized, established and substantiated

GEIGY PHARMACEUTICALS • Division of Geigy Chemical Corporation • New York 13, N. Y.



FLEXIBLE ARTHRITIS THERAPY with BUFFERIN®

Exploit fully the use of salicylates in arthritis—give steroids in minimal doses—combine salicylates with corticosteroids for additive antiarthritic effect—this is the program Spies[1] advocates in a recent article in the Journal of the American Medical Association.

Treatment of rheumatoid arthritis demands a "highly individualized program," Spies[1] writes. The additive action of salicylates permits use of smaller amounts of hormones, thus lessening or eliminating their well-known side effects. "A proper mixture of salicylates and corticosteroids produces an effective antirheumatic agent in many cases."[1]

Suit your treatment to your individual arthritic patient. Use the hormone you prefer, in the dosage you think best, but for better results combine it with BUFFERIN, a salicylate preparation proved to be well tolerated by arthritics.[2]

BUFFERIN contains no sodium, a marked advantage when cardiorenal complications make a salt-restricted diet necessary.

Each BUFFERIN tablet contains 5 grains of acetylsalicylic acid and the antacids magnesium carbonate and aluminum glycinate.

REFERENCES:
1. J.A.M.A. 159:645 (Oct. 15) 1955.
2. J.A.M.A. 158:386 (June 4) 1955.

BRISTOL-MYERS CO., 19 West 50 Street, New York 20, N. Y.

More evidence[1] to confirm that elixir

TYLENOL*

...quick-acting pediatric antipyretic-analgesic

reduces fever,
relieves aches, pains:

Tylenol "produced effective antipyretic and analgesic responses..."[1]

without worry:

"no side-effects were observed in 134 of the total 141 patients in this study."[1]

without a tussle:

"Tylenol was considered 'acceptable' or 'liked' by... 86% of the children."[1]

NOTE: PHYSICIANS ARE PRESCRIBING TYLENOL FOR THE FEVER AND PAIN THAT SOMETIMES FOLLOW "SHOTS"—ITS FAST ACTION MAKES THE CHILD COMFORTABLE QUICKLY AND ALLAYS PARENTS' ANXIETIES.

Elixir TYLENOL *for little "hot heads"*

acetaminophen, McNeil
(para-acetylaminophenol)

Bottles of 4 and 12 fl. oz.

McNEIL

*Trade-mark

1. Cornely, D. A., and Ritter, J. A.: N-acetyl-p-aminophenol (Tylenol Elixir) as a Pediatric Antipyretic-Analgesic, J.A.M.A. *160*:1219 (Apr. 7) 1956.

(Continued from page 58)

MEMBER CLINIC IN PACIFIC NORTHWEST UNIversity city of approximately 400,000 desires the services of Board eligible or certified otolaryngologist; salary open; full partnership and many other fine advantages and outstanding opportunities for the right man; prefer man under 35 years of age. Box 1896 C % AMA.

GENERAL PRACTITIONER — TAKE OVER 18 YEAR established practice; rent or sell well-equipped air-conditioned office; only physician, community 2000; excellent hospital 10 miles; excellent opportunity quick start without investment; owner leaving for health. F. Dale Johnson, MD, Waynetown, Indiana. C

GENERAL PRACTITIONER—DESIRING ADDITIONAL experience in 200 bed hospital*; supervise interns and externs; excellent experience in surgery, obstetrics-gynecology; salary open; apartment on grounds; area offers many opportunities for future private practice associations. Box 1890 C, % AMA.

LARGE COUNTY HOSPITAL — IN SOUTHERN UNIversity city; needs psychiatrists and staff physicians, preferably licensed or eligible; ward work and some teaching; competetive salary and complete family maintenance. Box 1921 C, % AMA.

SURGEON—TO ASSUME PRACTICE OF YOUNG DEceased physician in wealthy Chicago suburb; surgery and general practice; no obstetrics; office equipment available; no capital investment. For appointment write: Thomas Crowley, 1717 Glenview Road, Glenview, Illinois. C

PHYSICIANS WANTED — PHYSICIANS WITH SOME psychiatric experience; must supervise 1st year residents; salary $6900 to $7800 plus family maintenance. W. C. Brinegar, MD, Superintendent, Mental Health Institute+, Cherokee, Iowa. C

INTERNISTS AND GENERAL MEDICAL PHYSICIANS wanted—2400 bed hospital+; hourly commuting distance Chicago; salary ranges $7570-$11,610, depending upon qualifications. Write: Manager, Veterans Administration Hospital, Downey, Illinois. C

WARD SURGEON — BOARD CERTIFIED OR ELIgible; for surgical preceptor training program; salary up to $11,610 plus specialty allowance; appointment level based on qualifications. Write: Manager, Veterans Administration Hospital, Muskogee, Oklahoma. C

EENT—VACANCY FOR PHYSICIAN CAPABLE ALL phases EENT and eye; salary up to $11,610 plus specialty allowance, depending on qualifications. Write: Manager, Veterans Administration Hospital, Muskogee, Oklahoma. C

WANTED—GENERAL PRACTITIONER TO COMPLETE group, central California city; ideal, modern facilities; full partnership opportunity; surgical and/or general practitioner experience required; details 1st letter. Box 1799 C, % AMA.

GENERAL PRACTITIONER—UNDER 40 YEARS; FOR small, new group of general practitioners; $1000 monthly plus percentage; permanent position; Long Beach California. Lakewood Plaza Medical Group, 2925 Palo Verde, Long Beach 15, California. C

OPPORTUNITY — ASSISTANTSHIP OR PRECEPTORship in general and thoracic surgery leading to partnership for right man; resort city Florida; Florida Boards required; full particulars 1st letter. Box 1906 C, % AMA.

NEW JERSEY—WANTED, RESIDENT STAFF PHYSIcian; 900-bed hospital (psychiatric) with active treatment program; opportunities for research; New Jersey license or eligibility required; salary open. Box 1821 C, % AMA.

NORTHWESTERN MINNESOTA — TAKE OVER LUcrative, active general and surgical practice until July, 1957; equipped office near community hospital available on rental basis; immediate income; possible purchase later. Box 1217 C, % AMA.

WANTED—YOUNG PHYSICIANS; 500 BED HOSPItal for chest diseases; active medical, surgical training and research program; salary range $7570 to $13,760. Write or apply: Manager, VA Hospital, San Fernando, California. C

INTERNIST WANTED—JOIN SMALL GROUP OF TWO surgeons, 1 internist; Boards or Board eligible only; start at $10,000; percentage as rapidly as desired; full information 1st letter; general medical, private practice; Iowa. Box 1847 C, % AMA.

WANTED—AMERICAN BOARD SPECIALISTS; PHYsicians interested in group or private practice, teaching, research, public health or industrial medicine; National and International services. Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago. C

CALIFORNIA MEDICAL BUREAU AGENCIES—FTR physicians placements, and hospitals and medical properties for sale. 405 E. Green Street, Pasadena, California, and 610 S. Broadway Street, Los Angeles 14, California. C

OPHTHALMOLOGIST WANTED—FOR A MID-WESTern clinic and hospital+; ample salary, retirement and pension plan and other inducements; must have Board certification or be eligible for Board examination. Box 1860 C, % AMA.

WANTED—YOUNG PHYSICIAN; AS ASSOCIATE TO general practitioner; rural Iowa town 700 population; excellent opportunity learn surgery if interested; starting salary, partnership later if mutually satisfactory. Box 1838 C, % AMA.

WANTED—GENERAL PRACTITIONER; AGE 30 TO 40; to associate with 50 bed hospital established 42 years; duties; office and house calls, obstetrics, assist in surgery; good future for one willing to work. Box 1850 C, % AMA.

DERMATOMYCOSIS PEDIS
(athlete's foot)
... a rational treatment routine
Desenex®
"NIGHT & DAY"

NIGHT
Every night, liberally apply Desenex Ointment Zincundecate to infected and surrounding areas.

DAY
Each morning, freely dust Desenex Powder Zincundecate on feet (rubbing in to insure contact) and in shoes and socks.

Consistently successful in the treatment and prevention of superficial fungous infections.
•
Cures the average moderate to severe case in two to three weeks.

Desenex®
OINTMENT and POWDER
ZINCUNDECATE
and SOLUTION
UNDECYLENIC ACID

- *Potent antimycotic action*
- *Soothing antipruritic effect*
- *Virtually nonirritating*

Write today for samples and literature

Available at all pharmacies

Maltbie PD-59

MALTBIE LABORATORIES DIV.
WALLACE & TIERNAN INC.
25 MAINST. BELLEVILLE 9 NEW JERSEY

COLORADO COMMUNITY WITH 15 BED HOSPITAL; urgently in need of physician; present doctor leaving for specialization; center of large ranching area; excellent schools and churches. Contact: Chester Totten, Simla, Colorado. C

GENERAL PRACTITIONER—EASTERN OREGON; three man group; $10,000-$12,000 with partnership second year; excellent hospital and office facilities; Oregon basic science and license required. Write: Burns Clinic, Burns, Oregon. C

WANTED BY OCTOBER 15TH—BOARD QUALIFIED anesthesiologist; to head department in community hospital near Boston; income fee-for-service basic and additional guaranteed salary as consultant. Box 1870C, % AMA.

PSYCHIATRIST WANTED—FOR 72 BED PRIVATE psychiatric hospital; knowledge of insulin and ECT required; 1 year contract, $7,000 plus maintenance. Write for information and application form to: O. Bozett, MD, Fair Oaks, Inc., Summit, New Jersey. C

YOUNG GENERAL PRACTITIONER—INTERESTED IN obstetrics and pediatrics; to join 3 man group in suburban area, large midwestern city; Minnesota license necessary. Box 1903 C, % AMA.

WANTED—IMMEDIATELY; RESIDENT PHYSICIAN; accredited 150 bed general hospital; 90 miles east of Pittsburgh, Pennsylvania; license required; salary $600 per month. Box 1915 C, % AMA.

WANTED — RADIOLOGIST; ASSOCIATION WITH 9 man group leading to partnership; above average salary with bonus; no capital outlay needed; professional and personal data requested. Box 1920 C, % AMA.

WANTED—RECENT GRADUATE AS ASSOCIATE TO take over most of a general practice on a percentage basis; good opportunity for active young man. Dr. Breckenridge, Mason, Texas. C

WANTED—GENERAL SURGEON WITH TRAUMATIC experience; give age and particulars of training; eastern hospital 200 beds; salary $15,000 per year. Box 1849 C, % AMA.

WANTED—VA HOSPITAL, BIG SPRING, TEXAS; internist or general practitioner. For additional information write to: Personnel Officer, VA Hospital, Big Spring, Texas. C

WANTED — EENT DEPARTMENT HEAD IN SIX doctor clinic in Texas; ophthalmologist preferable; Board certification desirable, not necessary. Box 1024 C, % AMA.

WANTED—GENERAL PRACTITIONER; FOR RURAL area; 2500 population; general farming—sawmilling; hospitals in nearby towns. Contact: J. W. Beazley, Beaverdam Ruritan Club, Beaverdam, Virginia. C

WELL-ESTABLISHED HOSPITAL+ IN MIDDLE west—has opening for clinicians in otolaryngology; parttime; maintenance if desired; Illinois licensed. Box 1882 C, % AMA.

ANESTHESIOLOGIST WANTED — FOR CALIFORNIA group; top income and ideal conditions; must have excellent training and qualifications in all aspects of anesthesia. Box 1836 C, % AMA.

DEAR DOCTOR—IF WILLING TO WORK AND INterested in holding unusual EENT practice, have such practice which will sacrifice to competent operator; give details if interested. Box 1858 C, % AMA.

RADIOLOGIST—ASSISTANT IN 250 BED COMMUNITY hospital*+ near New York City; must be recent graduate certified in radiology; excellent financial arrangement. Box 1845 C, % AMA.

WANTED—FULL TIME PHYSICIAN FOR RAILWAY; must be eligible for license in Virginia, West Virginia and Ohio, and under age 55. Box 1809 C, % AMA.

WANTED—VA HOSPITAL, BIG SPRING, TEXAS; pathologist. For additional information write to: Personnel Officer, VA Hospital, Big Spring, Texas. C

WANTED—BOARD OR BOARD ELIGIBLE OTOLARyngologist; qualified in endoscopy; to become full partner in 5 man clinic. Box 1873 C, % AMA.

WANTED—YOUNG OBSTETRICIAN; TO ASSOCIATE with midwestern clinic group of 9 men; salary open; partnership available. Box 1872 C, % AMA.

WANTED—VA HOSPITAL, BIG SPRING, TEXAS; admitting officer. For additional information write to: Personnel Officer, VA Hospital, Big Spring, Texas. C

INTERNS AND RESIDENTS WANTED

*The * signifies a hospital approved for internships and the + approved for residencies in specialties by the Council on Medical Education and Hospitals of the A. M. A. Consult Council's approved list for types of internships and residencies approved.*

PATHOLOGY RESIDENCIES—650 BED, FULLY-ACcredited general hospital,*+ modern new building; has openings for pathology residents with supervised training under 3 full-time Board pathologists; 4 year Board approved integrated program in pathologic anatomy and clinical pathology, featuring work in radioactive isotopes, research, laboratory administration and forensic pathology in addition to autopsy and surgical pathology, clinical chemistry, microbiology, immunology, hematology, and blood banking; in 1955 hospital had 26,390 admissions, accomplished 658 autopsies, 10,020 surgical specimens, 303,923 clinical laboratory examinations; qualified applicants for 3rd and 4th year residencies will also be considered. Inquire: Dr. Melvin Gosting, Director, Diagnostic Laboratories, Miami Valley Hospital, Dayton 9, Ohio. D

(Continued on page 70)

now together...
for broader control

NEW Vioform®-Hydrocortisone Cream

antibacterial • antifungal • anti-inflammatory • antipruritic

An excellent combination for the control of eczematous eruptions, inflammation, erythema, edema, scaling and pruritus, Vioform and hydrocortisone is reported superior to either of its components used alone. "Symptomatic relief is frequently dramatic and complete as long as this treatment is continued."[1]

Effective—where many other therapies fail...

1. Arnold, H. L., Jr.: Postgrad. Med. *16*:492 (Dec.) 1954.

Supplied: Vioform-Hydrocortisone Cream, containing Vioform® (iodochlorhydroxyquin U.S.P. Ciba) 3% and hydrocortisone (free alcohol) U.S.P. 1% in a water-washable base; tubes of 5 Gm. and 20 Gm.

BEFORE: Soap-and-water eczema with paronychial involvement, of several years' standing, resistant to coal tar and other ointments.

AFTER 7 DAYS' TREATMENT with two daily applications of Vioform-Hydrocortisone Cream. Note closure of fissures, subsidence of scaling, recession of edema.

CIBA
SUMMIT, N. J.

2/3314R1

The Bright Side

by E. K. H.

Joe E. Lewis says he recently had a horrible nightmare. He dreamed that his wife and Marilyn Monroe were fighting over him—and his wife won.

❖

Like many small children, little Peggy had a desire to become a nurse. She trained on her dolls, and occasionally would receive an imaginary call to attend an emergency in the neighborhood. One day she rushed out on such a mission, neglecting as usual to close the door behind her.

When her mother called her back, Peggy begrudgingly retraced her steps, slammed the door shut, and raced off again on her errand of mercy.

When she got back, her mother asked her how her patient was getting along.

"She died," replied the little nurse, glaring at her mother accusingly. "She died while I was closing that darned door."

❖

"Money isn't everything," insists Mike Connolly, "but it's way ahead of whatever is in second place."

❖

Messrs. Goldfarb and Cohen, dress manufacturers, were in Paris on vacation. They found themselves in one of the finer restaurants, about to order dinner. Mr. Cohen gazed helplessly at the French menu, but Goldfarb, equally baffled but anxious to show off, called over a waiter and ordered with a flourish by pointing silently to the various dishes listed. Cohen was visibly impressed, until the waiter appeared with a large silver platter, removed the cover and—voila!—there was a suckling pig, beautifully browned, with a fine red apple in its mouth.

"Sam," Cohen cried, "I'm hungry enough to eat a wolf—but *pork*!?!?!"

Goldfarb, equally stunned by this unexpected catastrophe, recovered quickly. "Pork?" he shrugged. "Who eats the pork? In France, this is how they always serve baked apples!"

❖

The young man started work as a stockroom boy. Within six months he was made salesman. In another six months he was upped to sales manager and, shortly afterward, to general manager. A few days later, he was called in by the president of the firm, who explained that he would retire soon and turn the presidency over to the newcomer.

"Thanks," said the youth.

"*Thanks?*" growled the president. "You've been with this firm for only about a year—and that's all you can think of to say?!?"

"Well," said the young man. "Thanks a lot—Dad!"

❖

Russian weather broadcast: "Tomorrow will be sunny. That's an order!"

❖

George Gobel spotted a drunk feeling his way around a lamppost. 'Round and 'round he went, feeling the post. Finally he slumped to the curb and sighed, " 'Sno use, I'm walled in!"

A Brooklyn actress stalked into the office of the head of a private detective agency and launched into a tirade against her husband and how he was carrying on with another woman. When she finally stopped to catch her breath, the detective was able to get a word in.

"Just what do you want me to do, madam?" he asked.

"I want my husband and that woman followed," snapped the actress. "I want them followed night and day. I want a complete report on what she sees in him!"

❖

A Brooklyn teacher asked her pupils to list the 10 greatest men in the world. One boy's nominations:

"Brooklyn Dodgers, 9."

"Roy Rogers, 1."

❖

The seven-year-old son of the late Ambassador John E. Puerifoy cornered him and asked, "Daddy, how do you become a father?"

Mr. Puerifoy, a shy man, was both surprised and embarrassed. Realizing, however, that the situation had to be faced, he went into an elaborate explanation about birds, bees, pollen, etc.

"Oh, I don't mean that kind of father," interrupted the boy. "I mean the kind who wears his collar turned around backwards."

❖

"Hi, darling," said the young newlywed as he walked into the kitchen. "What's thawing?"

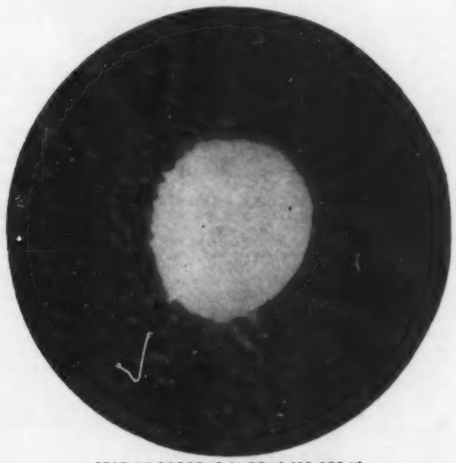
❖

Columnist Nick Kenny was discussing the backgrounds of famous people—among them, Bob Hope. Bob, who hardly looks it, was raised in one of the toughest neighborhoods in Cleveland, Ohio, and recalls fondly, "It was the kind of neighborhood where, if you saw a kid with teeth, you knew he was from out of town."

"You look fine to me, but my stethoscope seems to disagree."

PROTEUS VULGARIS (9200 X)

Most effective where the broad spectrums most often fail



STAPHYLOCOCCUS AUREUS (35,000 X)

ALBAMYCIN*

(BRAND OF NOVOBIOCIN SODIUM)

This new Upjohn discovery is most effective where the broad-spectrum antibiotics most often fail: against the treacherous *Staph* and *Proteus*. The clinical effectiveness has been demonstrated in a wide range of indications, including upper respiratory tract infections, lower respiratory tract infections, urinary tract infections, localized suppurative processes, certain eye and ear infections, and severe systemic infections.

Other significant Albamycin advantages: it produces high and prolonged blood levels on oral dosage, and no monilial superinfection or perianal pruritus has been reported to date.

DOSAGE: The recommended dose in adults is 1 capsule (250 mg.) every six hours or 2 capsules (500 mg.) every twelve hours, continued for at least forty-eight hours after the temperature has returned to normal and all evidence of infection has disappeared. In severe or unusually resistant infections, 0.5 Gm. every six hours or 1 Gm. every twelve hours may be employed.

The dose for children on similar schedules is 15 mg. per kilogram of body weight per day for moderately acute infections, and it may be increased to 30 to 45 mg. per kilogram of body weight per day for severe infections.

AVAILABLE: 250 mg. capsules in bottles of 16.

*TRADEMARK, REG. U.S. PAT. OFF.

The Upjohn Company **Upjohn** Kalamazoo, Michigan

(Continued from page 66)

RESIDENCIES AVAILABLE—MODERNLY EQUIPPED 516 bed, GM&S, fully approved VA Research Hospital+; affiliated with Northwestern University Medical School; openings now for residents in internal medicine, general surgery, pathology, physical medicine and rehabilitation, diagnostic and therapeutic radiology; must be U. S. citizens and graduates of approved schools; stipend $2840-$3550. For information write: Director, Professional Services, VA Research Hospital, 333 E. Huron St., Chicago 11, Illinois. D

RESIDENCIES AVAILABLE—INTERNAL MEDICINE; 3 year Board approval; recently activated general medical-surgical Veterans' Administration Hospital+ affiliated through Deans' Committee with 5 medical schools; academic atmosphere; clinical clerk program; affiliation with Bellevue Hospital for experience on women's medical wards; radioisotope and research laboratories available; citizenship requirement. Contact: Director, Professional Services, VA Hospital, 408 First Avenue, New York City. D

PSYCHIATRIC RESIDENCIES — AVAILABLE; VA Jefferson Barracks, Missouri, neuropsychiatric hospital,+ new Haun type; 3 year fully-accredited program and affiliated with St. Louis University and Washington University in conjunction with Veterans Administration Hospital, St. Louis; open only to qualified physicians who are U. S. citizens and graduates of approved medical schools. For information write: Director, Professional Services, VA Hospital, Jefferson Barracks, Missouri. D

APPROVED PATHOLOGY RESIDENCIES — AVAILable immediately in 443 bed general hospital*+ affiliated with Columbia Presbyterian Medical Center in New York City; 2 years approved residencies under 2 full time Board certified pathologists; closely supervised teaching program with active surgical, gynecological, and clinical pathology, hematology, and high autopsy rate. Inquire: Director of Laboratories, The Roosevelt Hospital, 428 West 59th Street, New York 19, New York. D

RESIDENCIES IN PSYCHIATRY—DUKE UNIVERsity*+; 3 year approved; complete patient and research facilities; closely supervised, analytically oriented psychotherapy and somatic therapy; adult and children's OPD; training in psychosomatic medicine and neurology; minimum starting salary $2400 plus room and board, uniforms and other financial aid. Write: Chairman, Department of Psychiatry, Duke University, Durham, North Carolina. D

APPROVED PSYCHIATRIC RESIDENCY — 500 BED hospital+ in Chicago medical center; Dean's Committee supervised didactic-clinical program on 55 bed psychiatry and neurology service, affiliated with University of Illinois, Loyola University, Chicago Medical School, Institute Juvenile Research, County Psychopathic Hospital, and large outpatient clinic. Write: Manager, Veterans Administration West Side Hospital, 820 South Damen, Chicago 12. D

PSYCHIATRIC RESIDENCIES — IN A GENERAL Medical and Surgical Veterans Administration Hospital, affiliated with the University of Michigan; offering a fully-accredited 3-year, well-balanced didactic and seminar program; opportunity for experience in an approved new children's residential psychiatric treatment center. For further information write: Dr. Paul M. Ireland, Manager, Veterans Administration Hospital, Ann Arbor, Michigan. D

PSYCHIATRIC RESIDENTS—CALIFORNIA DEPARTment of Mental Hygiene offers flexible 1 to 5 year residencies at 8 hospitals located throughout California; plan provides good income and outstanding opportunities for professional development. Write for descriptive folder showing hospitals, schedules, salaries, etc., Personnel Department, Department of Mental Hygiene, 1320 K Street, Sacramento. D

PSYCHIATRIC RESIDENCIES — IN A GENERAL medical and surgical Veterans Administration Hospital, affiliated with the University of Michigan, offering a 3 year, didactic and seminar program; opportunity for experience in an approved new children's residential psychiatric treatment center. For further information write: Dr. L. J. Kucera, Director, Professional Services, Veterans Administration Hospital, Ann Arbor, Michigan. D

TWO YEAR GENERAL PRACTICE RESIDENCY—offered in a very active GP hospital; fully integrated program directed by a medical educator of national reputation; salary will range between $5000-$6000 per year, depending on qualifications; maintenance and living facilities available. Apply to: North Detroit General Hospital, 3105 Carpenter, Detroit 12, Michigan, Attn. Mr. J. Hornstein. D

RESIDENT WANTED—FOR RESIDENCY STARTING immediately; general rotation residency in 174 bed hospital, well-equipped in all services; U. S. citizenship, 1 year internship and eligibility for California license required; in attractive mountain seaside resort city; salary $460 per month. Apply to: Director County Hospital, Santa Cruz, California. D

FULLY APPROVED TWO YEAR ANESTHESIOLOGY residency—320 bed non-sectarian, non-profit hospital+; stipend $300 month; California license or eligible. Apply: E. C. DeLear, Asst. Administrator, St. Francis Memorial Hospital, 900 Hyde Street, San Francisco 9, California. D

RESIDENCIES IN PATHOLOGY—AVAILABLE TO U. S. citizens; 300 bed GM&S VA hospital*+; affiliated Emory University with rotation plan; approved 4 years pathologic anatomy and clinical pathology; salary $2840-$3550. Address inquiries to: Manager, VA Hospital, Atlanta 19, Georgia. D

FULLY APPROVED ONE YEAR OBSTETRICS-gynecology residency; 320 bed non-sectarian, non-profit hospital+; stipend $300 month; California license or eligible. Apply: E. C. DeLear, Assistant Administrator, St. Francis Memorial Hospital, 900 Hyde Street, San Francisco 9, California. D

OPENING FOR THIRD RESIDENT IN ANESTHESIOLogy—available immediately; 2 years, fully-approved; maintenance and stipend. Apply: Doctor George Rich, Director of Anesthesia, Lenox Hill Hospital,*+ 111 East 76th Street, New York 21, New York D

APPROVED TWO YEAR RESIDENCY ANESTHESIOLogy—university hospital*+; available immediately; must be graduate AMA approved medical college. Apply: John L. Barmore, MD, Director Anesthesiology, University of Nebraska College of Medicine, Omaha, Nebraska. D

TWO YEAR GENERAL PRACTICE RESIDENCY — minimum of $300 per month plus meals and family allowance; excellent medical staff in modern hospital*+ in Detroit suburb. Director's Office, Oakwood Hospital, Dearborn, Michigan. D

RESIDENT FOR GENERAL PRACTICE—MODERN, 120 bed hospital; 30 bassinets; rural community; JCAH accredited; assignment 1 year; salary open. Contact: Mr. Lee Nichols, Administrator, Kent County Memorial Hospital, 455 Toll Gate Road, Warwick, Rhode Island. D

ASSISTANT RESIDENCY—IN MEDICAL TUBERCUlosis; available immediately; please give references and qualifications upon application. A. Stewart Allen, FRCS(C), Medical Director, Grace Dart Hospital, 6085 Sherbrooke Street East, Montreal, Canada. D

SURGICAL RESIDENCY AVAILABLE—TO GRADUates of approved American medical schools on January 1, and July 1, 1957; at Hamot Hospital,*+ Erie, Pennsylvania; a 441 bed general hospital; stipend $200 per month plus full maintenance. D

ANESTHESIOLOGY RESIDENCY — APPROVED TWO year integrated didactic and clinical program available now; complete maintenance and stipend. Apply: S. N. Surks, MD, Chief of Anesthesiology, Long Island Jewish Hospital,*+ New Hyde Park, New York. D

ASSISTANT RESIDENCY IN INTERNAL MEDICINE—available immediately; 3 year Board approved training program in 500 bed Ohio hospital*+; stipend $250 month plus maintenance. Box 1765 D, % AMA.

TWO FIRST YEAR ASSISTANT OBSTETRICS-GYNEcology residencies—available immediately; 3 year approved programs; 500 bed Ohio hospital*+; $250 month plus maintenance. Box 1763 D, % AMA.

ONE RESIDENCY IN PATHOLOGY AVAILABLE—IN 500 bed Ohio general hospital*+; 4 year Board approved training program; stipend $250 month plus maintenance. Box 1764 D, % AMA.

MEDICAL RESIDENCY — 300 BED HOSPITAL*+; Graduates of approved medical schools; Illinois License, temporary or permanent, required. Write: Administrator, St. Francis Hospital, Evanston, Illinois. D

RESIDENCIES—MENNINGER SCHOOL OF PSYCHIAtry+; approved 3 year program; balanced clinical and didactic training including psychotherapy and somatic therapies, outpatient and child psychiatry; at VA, State and Menninger hospitals; affiliated with Topeka Institute for Psychoanalysis; 5 year appointments combining residency and staff experience for Board eligibility available at staff salaries. Write: Registrar, Menninger School of Psychiatry, Topeka, Kansas. D

APPROVED RESIDENCIES—VA HOSPITAL,+ HOUSton Texas; integrated training programs, Baylor University Affiliated Hospitals residencies, Texas Medical Center; applications accepted for neurology, pathology, physical medicine, psychiatry, radiology and urology; "Career" residencies in neurology, psychiatry and physiatry; citizenship required. Manager, VA Hospital, or Dean, Baylor University College of Medicine. D

INTERNSHIP APPOINTMENTS—12 MONTHS ROTATing; wanted immediately; 390 beds and 45 bassinets; over 42% of medical staff Board certified specialists; full laboratory facilities with approved use of radioactive iodine phosphorous, AU 198; approved residency program in urology, surgery, medicine, OB-GYN; $300 per month. Administrator, Orange Memorial Hospital*+, Orlando, Florida. D

PSYCHIATRY — STAFF AND RESIDENCY VACANcies; approved 3 year psychiatric residency in conjunction with Northwestern University Medical School; extensive training programs in related fields; staff salary $7570-$11,610, depending upon qualifications; 25% additional if Board certified; hourly commuting distance Chicago. Write: Manager, Veterans Administration Hospital+, Downey, Illinois. D

AVAILABLE RESIDENCIES — WOMAN'S HOSPITAL +; 125 beds; specialized obstetrics, gynecology; fully approved 3 year residency; 4,666 deliveries, 2,999 operations, 19,000 clinic visits 1955; selections during November for July 1, 1957; 1 1st year vacancy immediately available; maintenance, $150, $175, $200. Columbia Hospital for Women, Washington 7, D. C. D

RESIDENT PHYSICIAN—RADIOLOGY; UNEXPECTED vacancy available November 1, 1956; 3 years 4 months including therapy and radioactivity isotopes; fully approved. Apply now to: William D. Evans, MD, Assistant Medical Director, Los Angeles County General Hospital+, 1200 N. State St., Los Angeles 33, California. D

THREE RESIDENCY APPOINTMENTS IN ANESTHEsia—beginning January 1, 1957; for qualified graduates of grade A medical schools eligible for Ohio State Board examinations. Interested applicants write to: Robert A. Hingson, MD, Director, Department of Anesthesia, University Hospitals of Cleveland, 2065 Adelbert Road, Cleveland 6, Ohio. D

MEDICAL RESIDENCY—ONE YEAR, BOARD APproved; experience in hematology, clinical use of isotopes, oral endoscopy, chemotherapy of neoplasia, and general medicine; salary $300 per month. Write to: Dr. C. D. Howe, Chief of Medicine, The University of Texas M.D. Anderson Hospital and Tumor Institute,+ Houston, Texas. D

PATHOLOGY RESIDENCY — FIRST OR SECOND year; Four year approval pathologic anatomy and clinical pathology; 700 bed general hospital *+; must be U. S. citizen; California license or eligible; $300 monthly, full maintenance. Write: Pathologist, Sacramento County Hospital, 2315 Stockton Boulevard, Sacramento 17, California. D

IMMEDIATELY AVAILABLE—2 AMA APPROVED Internships; new facilities; fully-approved Joint Commission; 200 bed general hospital*+; 8900 admissions, 1100 births last year; good salary plus housing. Apply: Chairman, Intern Committee, Arnot Ogden Memorial Hospital, Elmira, New York. D

PATHOLOGY RESIDENCIES—UNIVERSITY OF KANsas Medical School*+ and VA Hospital; 4 year program available for certification, 1 year program for residents other specialties; 12 full time staff pathologists; U. S. citizens preferred. Apply: Dr. R. E. Stowell, Kansas City 12, Kansas. D

UNEXPECTED VACANCY IN FIRST YEAR OF THREE year approved psychiatric residency program; supervised work on inpatient service; active teaching; $4500 plus single maintenance. Contact: M. Rosenberg, MD, Office of Medical Education, Philadelphia General Hospital,*+ Philadelphia, Pennsylvania. D

WANTED—RESIDENTS IN PHYSICAL MEDICINE and rehabilitation; approved residents must be graduates of approved schools; chronic disease hospital+, 316 beds. Apply: Arthur Feigenbaum, Superintendent, Jewish Chronic Disease Hospital, 86 East 49th Street, Brooklyn 3, New York. D

RESIDENT PATHOLOGIST—POSITION AVAILABLE immediately; $150 per month, plus full maintenance; fully approved in pathologic anatomy, clinical pathology, surgical pathology and forensic pathology. Write to: Dr. G. R. Hennigar, Medical College of Virginia,*+ Richmond, Virginia. D

ANESTHESIOLOGY RESIDENCIES—AT UNIVERSITY of Minnesota Hospitals, Minneapolis Veterans Administration Hospitals and associated hospitals; an opening every 4 weeks. Address: Frederick H. Van Bergen, MD, Director of Anesthesiology, University of Minnesota Hospital, Minneapolis, Minnesota. D

BOARD APPROVED PSYCHIATRIC TRAINING—ECLectic approach including analytic supervision; 68 beds+ OPD adult and child, 8 patients average load; medical school*+ basic affiliation, 14 Diplomate staff; Mid-West; salary $4200 to $5400 plus quarters; reply biographic facts. Box 1887 D, % AMA.

WANTED—AVAILABLE IMMEDIATELY; TWO GENeral practice residencies for 1 year; salary $411 per month; residencies approved by AMA and by Veterans Administration for training; requirements: U. S. citizenship and California license. Apply: General Hospital of Riverside County*+, Arlington, California. D

WANTED—ONCOLOGY RESIDENT; FOR HOSPITAL*+ and tumor Board services starting September 15, 1956; residency is accredited. Reply to: H. M. Kersten, MD, Chairman Tumor Board, Hollywood Presbyterian Hospital, 1322 N. Verment Avenue, Los Angeles 27, California. D

IMMEDIATE OPENING GENERAL RESIDENCY—IN small active northern California County general hospital; large clinic; considerable surgery; $7200 per year starting salary, maintenance; California license and citizenship required. Apply: J. W. Randolf, Auburn, California. D

ANESTHESIOLOGY RESIDENCIES—APPROVED TWO year active teaching program; full maintenance and stipend; 1 year approved internship required. Apply to: Meyer Sakiad, MD, Rhode Island Hospital,*+ Providence 2, Rhode Island. D

NEUROSURGICAL RESEARCH RESIDENCY FELLOWship—now available; coordinated with approved 4 year neurosurgical residency program; advanced graduate degree obtainable. Department of Neurological Surgery, Medical College of Virginia, Richmond, Virginia. D

SURGICAL RESIDENTS—APPROVED; GENERAL 312 bed hospital*+; 2 1st year residencies available; active teaching program; stipend, $275 per month, plus room, board and laundry. Apply: Stephen B. Fuller, St. Luke's Hospitals, Milwaukee, Wisconsin. D

AMA APPROVED INTERNSHIP—ROTATING SERVice; 370 bed hospital*; 35 minutes to metropolitan area; salary $300 plus maintenance; furnished apartment. Address: Sister Mary Vetusa, Administrator, St. Catherine Hospital, East Chicago, Indiana. D

PATHOLOGY RESIDENCY OR ASSISTANT RESIdency—available immediately to person with previous training in pathology. Address communications to: Dr. Tobias Weinberg, Pathologist-in-Chief, Sinai Hospital*+, Baltimore 5, Maryland. D

VACANCIES FOR RESIDENT PSYCHIATRISTS — IN State School for mental defectives; $5400 1st year; $6020 2nd year; must be eligible to obtain license in New York State. For information write: Director, Wassaic State School, Wassaic, New York. D

NEED RESIDENT IN GENERAL PRACTICE — IMmediately and January 1957; training program approved by AMA; 158 bed hospital+ with closed staff; fully accredited by joint commission. Apply: Administrator, Nan Travis Memorial Hospital, Jacksonville, Texas. D

GENERAL PRACTICE ROTATING RESIDENCIES—salary $385 per month; must be citizen; 100 bed hospital; well-equipped and with full accreditation of Joint Commission. Write: Administrator, Tulare County General Hospital,+ Tulare, California. D

OPHTHALMOLOGY RESIDENCIES — IMMEDIATE openings; large university teaching hospital*+, located in middle Atlantic state; excellent training program; active service. Box 1917 D, % AMA.

APPROVED PATHOLOGY RESIDENCY—JANUARY 1, 1957; 290 bed San Francisco bay area hospital+; $350 to $550 monthly. Box 1879 D, % AMA.

(Continued on page 72)

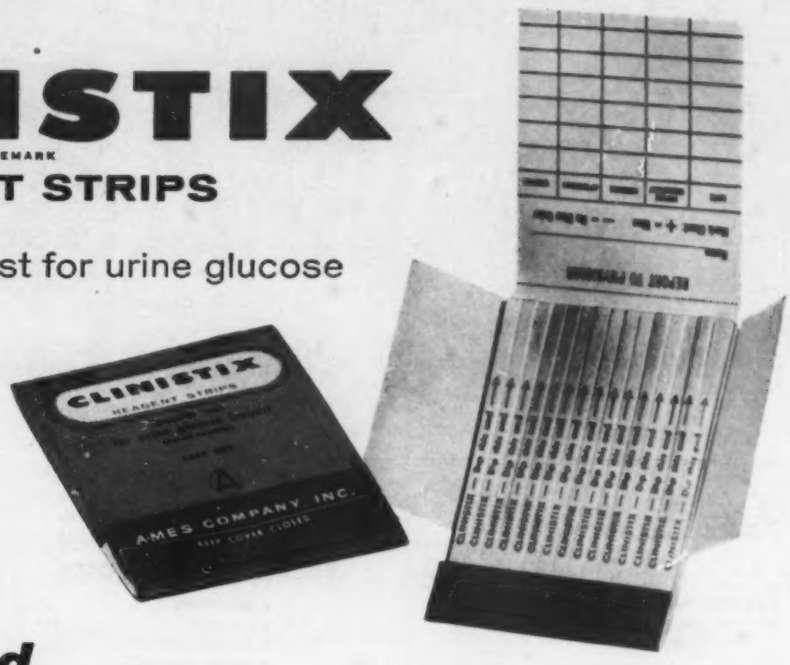
NEW CONCEPT IN URINE-SUGAR TESTING

CLINISTIX

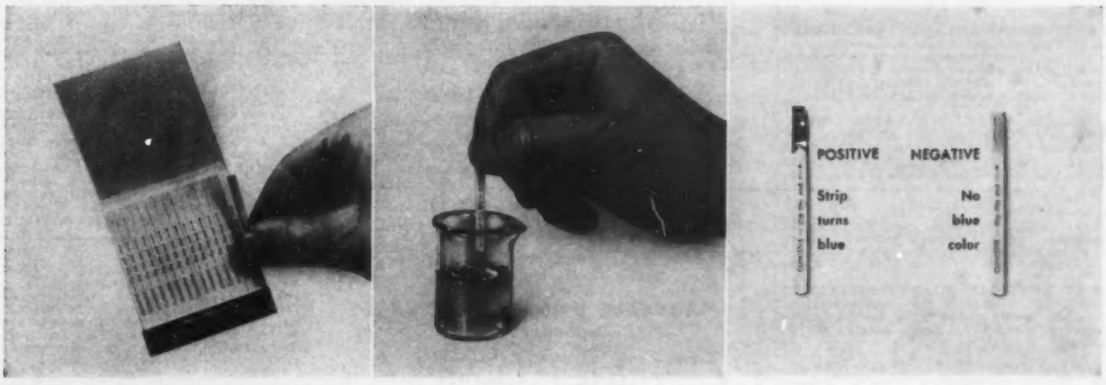
TRADEMARK

REAGENT STRIPS

specific enzyme test for urine glucose



just dip and read



complete specificity... unaffected by non-glucose reducing substances... differentiates glucose from other urine-sugars... thousands of tests reveal no substance causing a false positive.

extreme sensitivity... detects glucose concentrations of 0.1% or less.

utmost simplicity and convenience... a CLINISTIX Reagent Strip moistened with urine turns blue when glucose is present.

qualitative accuracy... used whenever presence or absence of glucose must be determined rapidly and frequently. CLINISTIX does not attempt to give quantitative results because so many factors in urine influence enzyme reactions.

economy... CLINISTIX saves time and cuts costs... each strip is a complete test rapidly performed without reagents and equipment.

available: Packets of 30 CLINISTIX Reagent Strips in cartons of 12—No. 2830.

AMES COMPANY, INC • **ELKHART, INDIANA**

Ames Company of Canada, Ltd., Toronto

15896

(Continued from page 70)

PSYCHIATRIC RESIDENCY—SEVERAL OPENINGS July 1957; for beginning or advanced training approved 3 year program. Department of Psychiatry, U.C.L.A. Medical Center,*+ Los Angeles 24, California. D

WANTED — RESIDENT IN RADIOLOGY; 3 YEAR approval in a mid-western hospital+ and clinic; excellent opportunity; starting salary is $300 a month including meals. Box 1862 D, % AMA.

CHICAGO EYE, EAR, NOSE AND THROAT HOSPITAL+—has openings for resident in otolaryngology; offering instruction, full maintenance, and salary; Illinois license. 231 W. Washington St., Chicago, Illinois. D

PEDIATRIC RESIDENTS—2 YEAR RESIDENCY, 400 bed hospital*+ and large out-patient clinic affiliated with medical school. Apply: Director, Mount Sinai Hospital, 2755 W. 15th St., Chicago 8, Illinois. D

PSYCHIATRIC RESIDENCIES — APPROVED AMA+; up to $8280 to start; housing; time off for psychoanalysis; Boston area. Box 1889 D, % AMA.

LOCUM TENENS WANTED

NORTHERN MINNESOTA—ONE YEAR; LARGE GENeral and surgical practice in community with modern hospital; located in lovely recreational area of state; possibility of purchase later. Box 1523 G, % AMA.

WE HAVE TWO POSITIONS OPEN—ONE FOR LOCUM tenens and the other position for 1 or 2 years. 200 Republic Building, Cleveland 15, Ohio. G

SITUATIONS WANTED

Patricia Edgerly

Do you need a well-qualified assistant or associate? We have many who would interest you. Write us.

THE NEW YORK MEDICAL EXCHANGE

489 Fifth Avenue (Opposite Public Library)

Specialists in Selection Since 1926

NEUROLOGIST — MS, NEUROLOGY; DIPLOMATE, (Neurology); trained Mayo Foundation; 10 years, consultant, neurology, internationally known group clinic; now prefers mountain states, southwest, west coast with high dry climate; seeks smaller group or association; early 40's. Woodward Medical Bureau, 185 North Wabash, Chicago. I

GENERAL PRACTITIONER—MIDDLE AGE, DRAFTee, will have fulfilled military obligations soon; medical residency in medical center completed just prior to service; military assignment utilized previous training well; highest recommendations, military and civilian; no obstetrics, surgery, anesthesia. Box 1927 I, % AMA.

GENERAL SURGEON — FIVE YEARS SURGICAL training, one of largest teaching hospitals; passed part I; 2 years, surgeon, USAMC; prefers group, Florida or midwest; licensed Florida, Indiana, Michigan; early 30's. Woodward Medical Bureau, 185 N. Wabash, Chicago. I

RADIOLOGIST—ISOTOPES; CERTIFIED ACR; 31; MW; married; healthy; taking AFIP felowship radiologic pathology, DNB, California license, category IV; desires permanent location West Coast; available January 5, 1957; prefer hard work. Box 1948 I, % AMA.

IF IN NEED OF AMERICAN BOARD SPECIALISTS to head departments, physicians for private practice, industry or public health, please write for recommendations, Woodward Medical Personnel Bureau, 185 N. Wabash, Chicago. I

RADIOLOGIST—15 YEARS TUMOR CLINIC; EXTENsive radium experience; radiation physics, isotopes (including Oak Ridge) training, 2 years isotope experience; publications on cancer; desires Radiology appointment, preferably therapy. Box 1678 I, % AMA.

UROLOGIST—BOARD CERTIFIED; 42 YEARS OLD; family; desires association with individual, group, or private practice opportunity; full details in 1st letter. Box 1940 I, % AMA.

GYNECOLOGIST—TAKING HIGHER EXAMINATIONS; free January; seeks assocation with individual or group; prebased to assist in obstetrics and general surgery. Box 1939 I, % AMA.

GENERAL SURGEON — BOARD QUALIFIED; 35; married; category IV; training urology, orthopedics; desires location alone with individual or group; will do some general practice. Box 1949 I, % AMA.

SURGEON—AGE 33; BOARD CERTIFIED; MARRIED with children; desires position with group or older surgeon; or location, small town or hospital in need of surgeon; draft exempt. Box 1947 I, % AMA.

INTERNIST—31; MAYO TRAINED; BOARD ELIGIble; category IV; radioisotopes and metabolic disease interest and experience; desire clinic association in or near a metropolis. Box 1946 I, % AMA.

UROLOGIST—SEEKS ASSOCIATION WITH GROUP or other urologist or location for private practice; Board eligible; veteran. Box 1931 I, % AMA.

CHEST PHYSICIAN—40; FAMILY; DESIRES POSItion as assistant medical director or staff physician modern tuberculosis hospital, Mid-West; well-trained in pulmonary diseases; experience: 3 year residency pulmonary diseases large metropolitan tuberculosis hospital; 2½ years superintendent and medical director of medium-sized tuberculosis hospital; desires position with full-time medical responsibility and minimum adminstrative duties. Bx 1902 I, % AMA.

INTERNIST—35; MARRIED; PART I BOARDS; VA training, university affiliated; licensed Minnesota (graduate) Missouri; clinic experience; completing military service; available January, 1957; clinic or group association desired; South, Mid-West, or West. Box 1708 I, % AMA.

Marcelle announces . . .

JUNITAR

liquid concentrate

TAR BATH

Contains 40% Juniper Tar (Cade Oil U.S.P.) in a water-miscible emulsion base, pH 4.5.

Scientifically formulated for the treatment of

PRURITIC DERMATOSES

- seborrhea
- psoriasis
- contact dermatitis
- atopic dermatitis
- senile pruritus
- pruritus vulvae
- generalized eczema

Provides effective, soothing relief to patients with itching skin disorders. Just add JUNITAR to tub of lukewarm water.

Easy • pleasant to use • non-staining • anti-inflammatory

FREE professional samples

Write for your JUNITAR samples and literature today.

MARCELLE PHARMACEUTICALS

Department 56

Division of Marcelle Cosmetics, Inc.

CHICAGO 47, ILLINOIS

Distributed in Canada by PROFESSIONAL SALES CORPORATION, 1434 St. Catherine St., West • Montreal, Canada

HANSON

DIETETIC SCALE

The standard diet scale of the medical profession for controlled diets. Rotating dial eliminates computation as each item of food is added on the serving plate.

Capacity 500 grams by grams. Stainless steel platform, white enamel body, easy to keep clean.

Model 1411 (illustrated) has glass protected dial, price $15.00.

Model 1440 enamel dial, price $10.00.

See your Supply House

HANSON SCALE CO.

Est. 1888

Northbrook, Illinois

GENERAL PRACTITIONER—27; SINGLE; COMPLETing military service, January, 1957; desires solo practice, or association with individual or small group in New Jersey area; interested in permanent location; A medical school. Box 1908 I, % AMA.

INTERNIST-GASTROENTEROLOGIST — 31; THREE years subspecialty experience including gastroscopy; completed part I American Board; considerable research experience; clinical appointment with research facilities; desired in fall. Box 1704 I, % AMA.

WHEN IN NEED OF AMERICAN BOARD SPECIALists to head departments, physicians for private practice, public health or industry, please write for recommendations. Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago. I

AVAILABLE—AMERICAN BOARD SPECIALISTS TO head departments, join groups, etc.; physicians for private practice, assistants or associates, industry, public health. Please write for recommendations. Shay Medical Agency, 55 E. Washington, Chicago. I

DENTIST — NINE YEARS EXPERIENCE IN REsearch, writing, editing, and teaching; desires opportunity in research, or writing, or teaching, or administrative (or combination) capacity; 33; family. Box 1654 I, % AMA.

OPHTHALMOLOGIST—UNIVERSITY TRAINED; COMpleting residency; wishes opportunity for solo practice or partnership in New Jersey, New York or New England; married; veteran; age 30. Box 1709 I, % AMA.

GENERAL PRACTITIONER—WANTS EMPHASIS ON OB-GYN; in Mid-West; 32; married; family; Northwestern graduate; OB-GYN residency, 2 years general practice. Box 1912 I, % AMA.

WANTED—INDUSTRIAL LOCATION; THIS COUNTRY or abroad; 20 years experience heavy construction, World War II, and mining industry; available in October. Box 1892 I, % AMA.

GENERAL SURGEON—33; MARRIED WITH FAMILY; passed I American Board Surgery; leaving service January, 1957; desires association with individual or group. Box 1885 I, % AMA.

BOARD QUALIFIED GENERAL SURGEON—DESIRES location. Box 1839 I, % AMA.

PROFESSIONAL AND TECHNICAL AIDES

WANTED—(a) CHIEF MED TECH; 1 other tech in well-equip'd lab, 60-bd gen hosp; $350 up; lovely N. Engl. twn 10,000, ideally loc for resort, sport activities. (b) MED TECH; vol gen hosp 175 bds; to $450; capital city; SW. (c) MED TECHS; new, well-equip'd, active lab; fully apprv'd gen hosp 400 bds; to $450; city 200,000; MW. (d) CHIEF MED TECH; 50 bd gen hosp & affil well est clin grp; to $400; sm resid, agric twn; NW. (e) X-RAY TECH; female only; ass't to chief, vol gen hosp 350 bds; $330; twn 50,000 nr impor univ ctr; MidE. (f) MED TECH; 7 man clin grp, all major spec; lovely twn 20,000; PacNW. (g) 3 MED TECHS; pref 1 w/bact trng; fully apprv'd vol gen hosp 250 bds; $350 up; cell city; MW. (h) CHIEF MED TECH; 400 bd gen hosp, fully apprv'd; lge city nr NYC. (i) LAB & X-RAY TECH; newly opened 50 bd gen hosp; 9 MDs on med staff; to $425; lovely Calif ocean resort twn. Woodward Medical Personnel Bureau, 185 N. Wabash, Chicago. L

PHYSIOTHERAPIST—WANTED AT ONCE; ONE MALE and one female physiotherapist; graduates of recognized school; particularly those experienced in massage; for full time work at Aspen Health Center, Aspen, Colorado; applicants should be under 30 years of age and interested in various types of outdoor athletics. Reply direct to: Bruno Geba, Aspen Health Center, giving full details of training etc. L

WANTED—(a) CHIEF TECH; competent bact., blood bank; 200 bed gen'l hosp; coll. town, near lge city, med. center, New England (b) BACT.; B.S., or M.S., min. 2 years' exp; med. school path. dept; So; reg. tech. eligible. (c) CHEMIST; to supervise dept., well-estab. clinical lab; Ph.D. or M.S. Trained med biochem; min. $8000; Calif. (d) REG. TECH; well-qual. chemistry, blood bank work; small gen. hosp; one tech; coll. town, Mo; $500. (e) LAB. TECH; small gen. hosp; res. town, So. Calif; fare paid to Calif. (f) PHYSICAL THERAPIST; BS, MS, or Ph.D; ass't supt, univ. rehabilitation prog. $5500. Medical Bureau, Burneice Larsen, Director, Palmolive Building, Chicago. L

CYTOLOGISTS WANTED — FOR CANCER SURVEY project by U. S. Public Health Service; salary $3415 or $3670 depending on qualifications; salary during 6 month training period for medical technicians, inexperienced in cytology, is $3175. For further information and application write to: Dr. E. von Haam, Ohio State University, Columbus, Ohio. L

LABORATORY TECHNICIAN—169 BED HOSPITAL*; 7 technicians MT (ASCP) (or eligible) approved laboratory school; full maintenance if desired; night and weekend call with generous remuneration; 3 weeks vacation; sick leave; salary open. Dr. Robert A. Fox, Northern Westchester Hospital, Mount Kisco, New York. L

WANTED—LABORATORY TECHNICIAN; LICENSED or qualified; 75 bed general hospital; pathologist directed laboratory; pleasant rural community of 10,000; $325-$375 plus calls. Write: Miss Lucille Mahone, Chief Technician, Watsonville Community Hospital, Watsonville, California. L

PHYSIOTHERAPIST — FULLY QUALIFIED FEMALE to work full time; private orthopedic practice. Reply to: Peter J. Dulligan, MD, 773 Teaneck Road, Teaneck, New Jersey. L

(Continued on page 74)

for prompt control of
pernicious vomiting of pregnancy

THORAZINE*

In a series of 158 women reported by Benaron and associates[1]:

"All of the 17 patients with hyperemesis gravidarum were benefited by ['Thorazine']."

"None of these patients aborted."

Hospital stay shortened.

Prior to 'Thorazine' therapy, these patients had suffered from "intensive vomiting" for 3 to 4 days–3 months, in one patient–and had failed to respond to treatment "with sedatives, dimenhydrinate, and/or vitamins."

1. Benaron, H.B.W., et al.: Am. J. Obst. & Gynec. 69:776 (Apr.) 1955

'Thorazine' should be administered discriminately and, before prescribing, the physician should be fully conversant with the available literature. 'Thorazine' is available in ampuls, tablets and syrup (as the hydrochloride), and in suppositories (as the base).

Smith, Kline & French Laboratories, Philadelphia

*T.M. Reg. U.S. Pat. Off. for chlorpromazine, S.K.F.

(Continued from page 72)

FEMALE LABORATORY AND X-RAY TECHNICIAN—for doctor's office; salary open. 5153 N. Clark St., Chicago, Illinois. L

HOSPITALS AND SANATORIA FOR SALE

LICENSED PSYCHIATRIC HOSPITAL—SUBURBS OF rapidly growing city, Southwest; 50 beds; fireproof, 1 story; ample grounds, well landscaped; operating now 50 to 75% capacity; "In the black"; good opportunity for psychiatrist, or other physician or surgeon interested in running his "own show." Box 1803 O, % AMA.

PRACTICES FOR SALE

CALIFORNIA—GENERAL PRACTICE, LOS ANGELES area; grossing $32,000; equipment optional. Box 1942 P, % AMA.

CALIFORNIA — GENERAL PRACTICE; EXCELLENTly located 4 room office in one of the fastest growing communities in U. S. A.; 55,000 population at present; close to beaches and mountains; gross excess of $30,000 yearly; immediate possession; $5000 cash includes equipment; will introduce. Franz Pohl, MD, 106 N. Claudina Street, Anaheim, California. P

CALIFORNIA—EENT PRACTICE; ESTABLISHED 1939; for sale by doctor's widow; in Indio, California; leasing building and equipment; air-conditioned, separate building, located on residential street; ample parking. Mrs. Ruth Berke, Box 56, Indio, California. P

CALIFORNIA—SOUTHERN; GENERAL PRACTICE; including medical building (usable combined residence) plus X-ray; in growing coastal community with ideal climate; owner moving; price $25,000; down payment $15,000 Box 1880 P, % AMA.

DISTRICT OF COLUMBIA—WASHINGTON; FOR SALE immediately; general practice; active and long established; 7 room office; fully-equipped and air-conditioned; excellent location; moving to another state. Write or phone: Leon Seley, MD, 503 11th St., S.E. P

FLORIDA—SOUTH CENTRAL; GENERAL PRACTITIONER or internist wanted; to take over lucrative, long established practice; well-equipped 6 room office; Florida license necessary; price terms nominal to right party; state qualifications in query for details. Box 1718 P, % AMA.

ILLINOIS—CHICAGO; GENERAL PRACTICE ESTABlished 25 years; complete office equipment; good transportation; near northwest side of Loop. Call: Longbeach 1-4080, between 2:00 to 5:00 P. M. P

IOWA—EENT PRACTICE OF LATE DR. FRANCIS Quinn, established 33 years same location, Dubuque; large surrounding territory; complete office equipment; records intact; terms if desired. Box 1945 P, % AMA.

MAINE—VERY GOOD GENERAL PRACTICE TO TAKE over; leaving State; any reasonable offer accepted; hurry. Box 1911 P, % AMA.

MICHIGAN—ALLERGY PRACTICE LOCATED IN MIDwestern city of 190,000; gross income of $50,000 annually; physician retiring because of ill health. Box 1909 P, % AMA.

NEW JERSEY—ESTABLISHED PEDIATRIC PRACtice; drawing from 6 adjacent communities; suburb of Elizabeth and Newark; good hospitals; reasonable; price includes equipment and practice. Box 1905 P, % AMA.

NEW YORK — WESTERN; GENERAL PRACTICE; well-established and well-equipped, in combination with fully furnished house; low overhead; hospital in town; easy terms. Box 1774 P, % AMA.

NEW YORK—UNOPPOSED ACTIVE GENERAL practice in rich farming country near Finger Lakes; hospital connection open (4 miles); attractive, modern ranch-type home (cinderblock), 3 bedrooms, new 2 car garage annex and 7 room office on Main Street, built 5 years ago; school physician and health officer; home and office completely furnished; wonderful buy at $29,000; can be financed, $10,000 cash will handle; no other offers; reason for sale: retirement. Box 1894 P, % AMA.

NEW YORK—FOR SALE OR RENT; LONG ISLAND, New York; completely equipped offices, 6 rooms for internist and gastroenterologist; living quarters (7 rooms above); 29 years established; retiring; will introduce; write for further details. Box 1739 P, % AMA.

OHIO—ESTABLISHED GENERAL PRACTICE; COUNty seat central Ohio; 2 open staff modern hospitals; price reasonable; includes drugs, instruments, equipment, practice etc.; no real estate; retiring. Box 1837 P, % AMA.

PENNSYLVANIA—SALE OR RENT; GENERAL, SURgical; Philadelphia, 23 years; relocating for health; ultra-modern, air-conditioned, 6 rooms; use of equipment, drugs; 2 apartments, additional office bringing $165 monthly; will introduce. Box 1925 P, % AMA.

TEXAS—HOUSTON; ESTABLISHED GENERAL PRACtice; good community center; fully-equipped, air-conditioned building; available immediately; excellent opportunity in booming capital of oil industry; $2000 down, easy terms, $6000 total. Box 1926 P, % AMA.

VIRGINIA — FOR SALE IMMEDIATELY; WELLestablished eye, ear, nose and throat practice; equipment and supplies; terms reasonable, can be arranged to suit; moving to another state. Box 1687 P, % AMA.

WEST VIRGINIA—FOR SALE, WELL-ESTABLISHED EENT practice; terms reasonable; can be arranged to suit. Reply to: NLZ, Box 1031, Charleston 24, West Virginia. P

INDEX TO ADVERTISERS

FIRM	PAGE
A	
Abbott Laboratories	34-A
American Hospital Supply Corp.	50
Ames Co., Inc.	71
Armour Laboratories	12, 58
Aseptic-Thermo Indicator Co.	62
B	
Battle Creek Sanitarium	77
Bellevue Place	77
Borcherdt Malt Extract Co.	46
Bristol-Myers Co.	64
Burdick Corp.	56
Burroughs Wellcome & Co., Inc.	6, 34
C	
Cereal Institute, Inc.	16, 17
Ciba Pharmaceutical Products, Inc.	4-5, 20, 24-25, 67
D	
Dietene Co.	44
E	
Eaton Laboratories, Inc.	19, 46
G	
Geigy Pharmaceuticals	29, 51, 63
General Foods Corp.	30
H	
Hanson Scale Co.	72
Hynson, Westcott & Dunning, Inc.	4th Cover
J	
Johnson & Johnson	59
L	
Lakeside Laboratories, Inc.	78
Leeming, Thomas, & Co.	6, 62
Lederle Laboratories	10-11, 41
Lilly, Eli, & Co.	42
Linde Air Products, Division of Union Carbide & Carbon Corp.	54
Lloyd Bros., Inc.	48-49
Luzier's Inc.	77
M	
Maltbie Laboratories Division, Wallace & Tiernan, Inc.	66
Marcelle Cosmetics, Inc.	72
McNeil Laboratories, Inc.	65
Medical Bureau	47, 72
Merck & Co., Inc.	52-53, 3rd Cover
N	
New York Medical Exchange	72
Nordmark Pharmaceutical Laboratories, Inc.	40
North Shore Health Resort	77
P	
Parke, Davis & Co.	14, 15
Pfizer, Chas., & Co., Inc.	33, 36
Physicians Drug & Supply Co.	77
Professional Printing Co., Inc.	74
Purdue Frederick Co.	9
R	
Riker Laboratories, Inc.	35
S	
Saunders, W. B., Co.	Front Cover, 2nd Cover, 3
Schering Corp.	18A
Searle, G. D., & Co.	23
Shay Medical Agency	50
Smith, Kline & French Labs.	8, 31, 45, 57, 73, 75
Squibb, E. R., & Sons	38-39
Strasenburgh, R. J., Co.	47
Swift & Co.	60
T	
Tufts College Medical School	77
Tutag, S. J., & Co.	46
U	
Upjohn Co.	37, 69
W	
Wallace Laboratories	27, 55
Welch Allyn, Inc.	13
West Coast Medical Counsellors, Agency	54
Whittaker Laboratories, Inc.	77
Williams & Wilkins Co.	7
Willows Maternity Sanitarium	77
Winthrop Laboratories, Inc.	43
Woodward Medical Personnel Bureau	56, 72
Wyeth Laboratories	61

APPARATUS, ETC., FOR SALE

SIGNIFICANT SAVINGS ON NEW HOSPITAL AND medical equipment—Write: Kirshner Associates, Inc., 98 Van Cortlandt Park South, New York 63, New York Q

GUARANTEED RECONDITIONED X-RAY, ELECTROmedical and electrocardiograph equipment; available at all district offices; United States and Canada; deal directly with factory organization; all sales and service personnel factory-trained; prices include installation and operating instructions. Write to: B-9, General Electric Company, X-Ray Department, 4855 Electric Ave., Milwaukee 1, Wisconsin. Q

14 x 17 X-RAY CABINET—8½ x 11 MEDICAL RECord file; both with sliding doors; 3-5-8 compartment size; price starts $75; 50% discount on new X-ray intensifying screens; America's largest distributor of X-ray cabinets; catalogue. Hanley Medical Equipment Company, 5614 South Grand, St. Louis 11, Missouri. Q

LARGEST STOCK OF USED—RECONDITIONED AND surplus X-ray equipment in America—All makes and models of diagnostic and therapy units, delivered, installed, guaranteed and serviced; write for details and new accessory price list. Medical Salvage Co., Inc., 217 E. 23rd St., New York 10, New York. Q

LARGE STOCK NEW, USED EQUIPMENT; INSTRUments; available for physician, hospital, or laboratories. Harry Wells, 400 E. 59th St., New York 22, New York.

BOOKS WANTED AND FOR SALE

PHYSICIAN—IS HIGHLY DESIROUS OF OBTAINING the following issues of THE JOURNAL AMA: April 21, 1906, March 7, 1908, March 6, 1909, April 9, 1910; amount agreeable to both parties will be paid. Write: Dr. S. D. Anderson, 4 South Genesee St., Waukegan, Illinois. R

FOR RENT

FOR RENT — NORTH ARLINGTON, NEW JERSEY; office located in the heart of fast growing community, street level, main thoroughfare; 1 high-school nearby, another school in construction, 2500 students across the street; shortage of MD in area. Box 1937 T, % AMA.

SOUTHERN CALIFORNIA—ESTABLISHED MEDICAL building (usable combined residence) including X-ray; in growing coastal community with ideal climate; owner movng; will introduce; price $25,000, down payment $15,000. Box 1689 X, % AMA.

TWO RIVERS, WISCONSIN—PHYSICIAN'S OFFICE for rent; in new, 1 story professional building ready for occupancy September 1, 1956. Call or Write: W. O. Simonis, DDS, Two Rivers, Wisconsin. T

MIAMI, FLORIDA—IDEAL MEDICAL OFFICE FOR rent; new 40 block area, 3 new schools, 2 thriving dentists, only 1 general practitioner; no obstetrician. Mitchell, 707 N. W. 98 St. T

FOUR AND ONE HALF ROOM NEW MODERN OFFICE with lab—ground floor brick; west surburban Chicago residential area; excellent hospitals; also new equipment for sale. Box 1827 T, % AMA.

PHYSICIANS OFFICE SPACE—GROUND FLOOR; rent reasonable; at 660 Pearson St., Des Plaines, Illinois; desirable location. Phone: Vanderbilt 4-1917. T

PUBLISHERS AND PRINTERS

HISTACOUNT
America's Largest Printers to the Professions
MEMO Printing & Records
PROFESSIONAL PRINTING COMPANY, INC.
NEW HYDE PARK, N. Y.

PATIENTS' RECORDS AND FILES

to help the depressed and anxiety-ridden housewife who is surrounded by a monotonous routine of daily problems, disappointments and responsibilities . . .

With 'Dexamyl' you can often help her to face her problems; help her to regain lost interests; help her to rediscover the zest and purpose in life. The salutary effect of 'Dexamyl' is free of the dullness caused by many "anti-anxiety" agents alone; free of the excitation sometimes caused by stimulants alone. Her mood improved, disturbing mental and physical symptoms often vanish.

DEXAMYL*

tablets · elixir · Spansule† capsules

smoothly and subtly relieves both anxiety and depression

Each 'Dexamyl' Tablet and each teaspoonful (5 cc.) of the Elixir contains Dexedrine* (dextro-amphetamine sulfate, S.K.F.), 5 mg., and amobarbital, ½ gr.
'Dexamyl' *Spansule* capsules are available in two strengths: 'Dexedrine', 15 mg., and amobarbital, 1½ gr.; 'Dexedrine', 10 mg., and amobarbital, 1 gr.

Smith, Kline & French Laboratories, Philadelphia

*T.M. Reg. U.S. Pat. Off.
†T.M. Reg. U.S. Pat. Off. for sustained release capsules, S.K.F.

can you spot

the bronchodilator,

Doctor?

■ NORISODRINE in the AEROHALOR is so compact that it fits in the palm of the hand.

This permits your bronchial asthma patients to self-administer NORISODRINE whenever, or *wherever,* an attack threatens. But, without attracting attention to themselves.

More important, NORISODRINE brings quick relief—almost as rapidly as with intravenous or intramuscular therapy; often where other commonly-used bronchodilators fail.

And because the dosage can be accurately adjusted to each individual's need, serious side effects rarely occur.

Have you thought about keeping a supply of NORISODRINE Sulfate in the AEROHALOR in your office? That way, you can quickly demonstrate its proper use, adjust the dosage and get the patient started without delay.

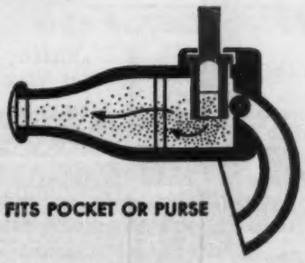
Abbott

NORISODRINE® SULFATE POWDER

(ISOPROTERENOL SULFATE, ABBOTT)

in the AEROHALOR®

(ABBOTT'S POWDER INHALER)



FITS POCKET OR PURSE

POSTGRADUATE DIVISION

TUFTS UNIVERSITY SCHOOL OF MEDICINE

At New England Medical Center, 1956-57

REVIEW OF RECENT ADVANCES IN INTERNAL MEDICINE. October 1-6, 1956. This is a one-week, full-time refresher course designed to review the latest developments in internal medicine for general practitioners and internists. Dr. Robert P. McCombs in charge. Minimum enrollment: 25. Tuition fee $50.

ELECTROCARDIOGRAPHY I. December 17-21, 1956. A five-day course for beginners has been designed to familiarize the general practitioner with the interpretation of electrocardiograms. Dr. Heinz Magendantz in charge. Minimum enrollment: 15. Tuition fee $40.

ELECTROCARDIOGRAPHY II. May 13-15, 1957. A continuation course for those who have taken Electrocardiography I or have had previous experience in reading electrocardiograms. Dr. Heinz Magendantz in charge. Enrollment limited to 30. Tuition fee $25.

Address all communications to:

POSTGRADUATE DIVISION, TUFTS UNIVERSITY SCHOOL OF MEDICINE
171 HARRISON AVENUE, BOSTON, MASS.

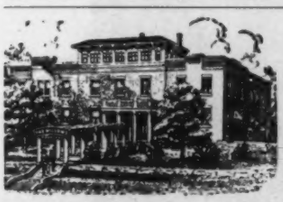
North Shore Health Resort

on the shores of Lake Michigan
WINNETKA, ILLINOIS

NERVOUS and MENTAL DISORDERS
ALCOHOLISM and DRUG ADDICTION
Modern Methods of Treatment
MODERATE RATES

Established 1901 *Fully Approved by the*
Licensed by State of Illinois *Joint Commission on Accreditation*

SAMUEL LIEBMAN, M.S., M.D.
Medical Director
225 Sheridan Road Winnetka 6-0211



The Willows Maternity Sanitarium, Inc.

Since 1905
Competent, ethical services for expectant mothers, spacious recreation grounds. Patients accepted any time. Early entrance advised. Adoptions through Juvenile Court. Rates reasonable and adapted to patient's needs. Complete Medical Staff. Address:
MRS. DON D. HAWORTH, Supt.

2927 Main St., Kansas City 8, Mo. Tel. Westport 1-2104

BATTLE CREEK SANITARIUM

90TH YEAR OF CONTINUOUS SERVICE

A general medical institution fully equipped for diagnostic and therapeutic service. Close cooperation with home physicians in management of chronic diseases.

For rates and further information, address Box 101
THE BATTLE CREEK SANITARIUM BATTLE CREEK, MICHIGAN
Not affiliated with any other Sanitarium

BELLEVUE PLACE

for

Nervous and Mental Diseases

EDWARD ROSS, M.D., Medical Director
BATAVIA, ILLINOIS PHONE: BATAVIA 1520

The Cosmetic Answer

More and more doctors are coming to realize that the problems of many of their patients can be answered by the intelligent use of the right cosmetics.

Frequently, disfiguring marks can be effectively concealed with a resultant improvement in the subject's general outlook on life.

There are many periods in a woman's life when an interest in improving her appearance goes a long way towards restoring a sense of well-being.

We suggest that a normally healthy person enjoys looking attractive as well as feeling fit.

We also suggest that the services of a Luzier Cosmetic Consultant can be of help in all cases where a restoration of self-confidence is a factor.

Luzier's Inc., Makers of Fine Cosmetics & Perfumes

GIE

KANSAS CITY 41, MISSOURI

PHYSICIANS' DRUG & SUPPLY CO.
PHILADELPHIA 6, PA.
FOR TWO DECADES
ETHICAL PHARMACEUTICALS AND SUPPLIES
DIRECT TO THE PROFESSION
WRITE FOR COMPLETE CATALOG

desirable assistants

for your institution

can be contacted thru

A CLASSIFIED ADVERTISEMENT

in the JOURNAL

For 22 Years: *No Finer Name in Contraceptives*

COOPER CREME

The ORIGINAL Contraceptive Creme

TRIOXYMETHYLENE .04%
SODIUM OLEATE .67%

$1.75 Tube with Applicator
FREE
Send for Yours Today
WHITTAKER LABORATORIES, INC.
PEEKSKILL, N.Y.

YOUR PATIENT NEEDS AN ORGANOMERCURIAL

Practicing physicians know that many years of clinical and laboratory experience with any medication are the only real test of its efficacy and safety.

Among available, effective diuretics, the organomercurials have behind them over three decades of successful clinical use. Their clinical background and thousands of reports in the literature testify to the value of the organomercurial diuretics.

TABLET

NEOHYDRIN®

BRAND OF CHLORMERODRIN (18.3 MG. OF 3-CHLOROMERCURI-2-METHOXY-PROPYLUREA EQUIVALENT TO 10 MG. OF NON-IONIC MERCURY IN EACH TABLET)

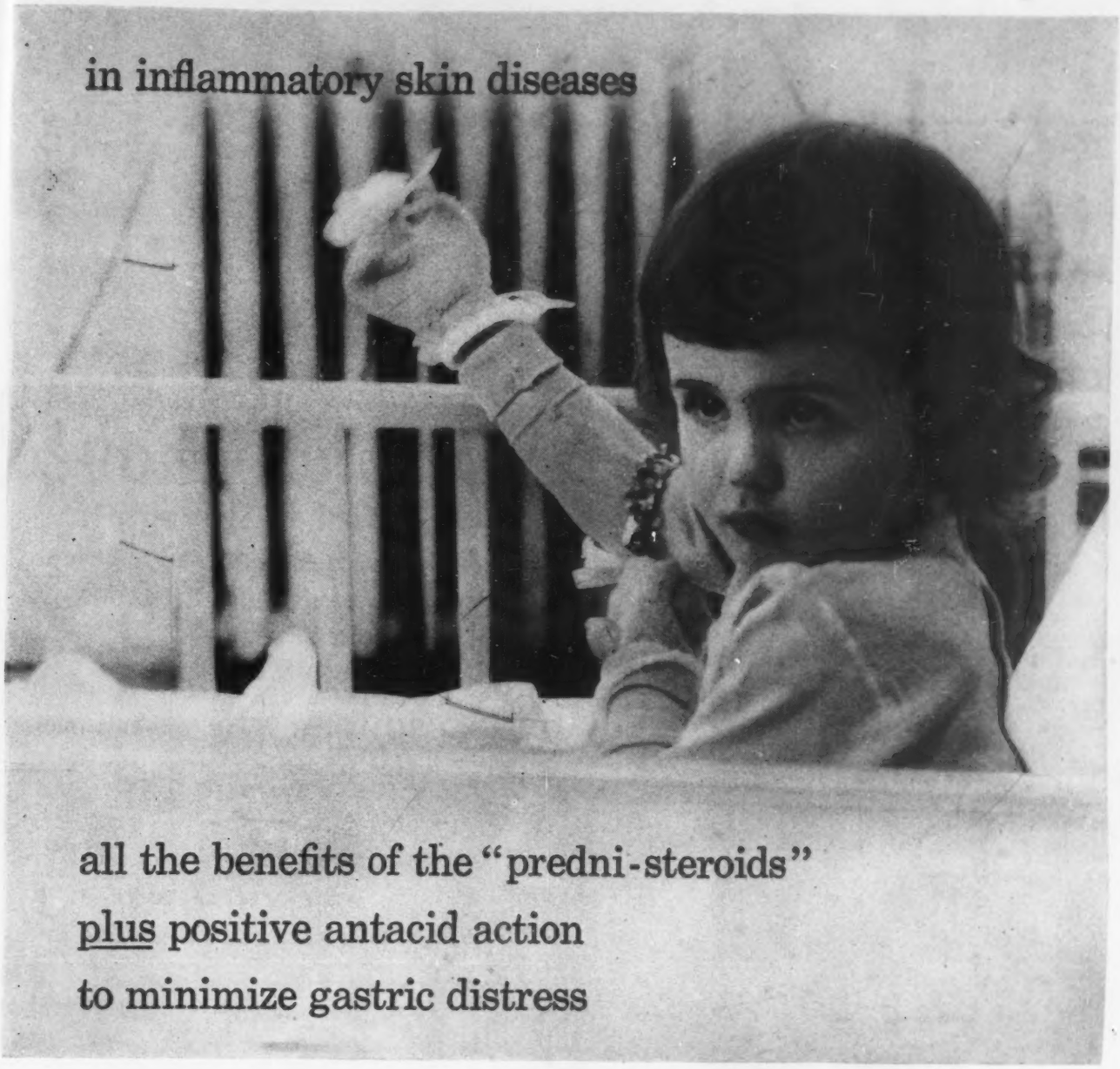
LAKESIDE

a standard for initial control of severe failure

MERCUHYDRIN® SODIUM

BRAND OF MERALLURIDE INJECTION

02188


in inflammatory skin diseases
all the benefits of the "predni-steroids"
plus positive antacid action
to minimize gastric distress

ROUTINELY ACHIEVED WITH

'Co-Deltra'

(Buffered Prednisone)

Multiple Compressed Tablets

2.5 mg. or 5 mg. prednisone or prednisolone with 50 mg. magnesium trisilicate and 300 mg. aluminum hydroxide gel.

'Co-Hydeltra'

(Buffered Prednisolone)

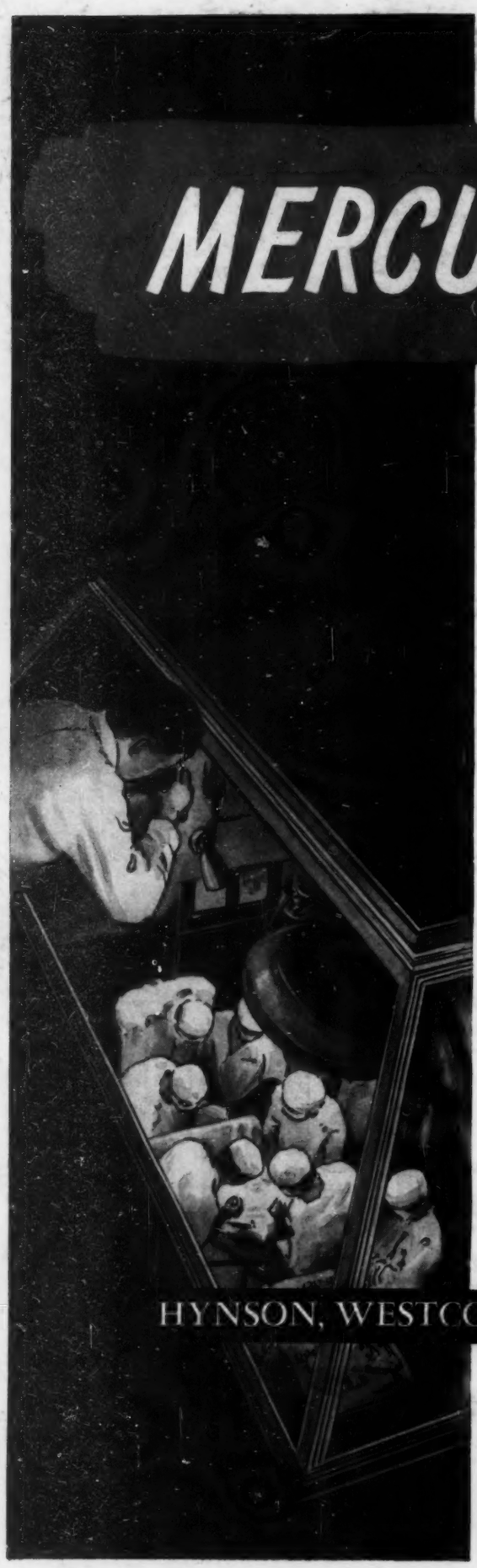
Clinical evidence[1,2,3] indicates that to augment the therapeutic advantages of prednisone and prednisolone, antacids should be *routinely* co-administered to minimize gastric distress.

References: 1. Boland, E. W., *J.A.M.A.* 160:613, (February 25,) 1956. 2. Margolis, H. M. *et al*, *J.A.M.A.* 158:454, (June 11,) 1955. 3. Bollet, A. J. *et al*, *J.A.M.A.* 158:459, (June 11,) 1955.

'CO-DELTRA' *and* 'CO-HYDELTRA' *are the trademarks of* MERCK & CO., INC.

MSD

MERCK SHARP & DOHME
DIVISION OF MERCK & CO., INC.
PHILADELPHIA 1, PA.



MERCUROCHROME

(H. W. & D. brand of merbromin)

tested and proved

No antiseptic has been proved to be more effective than MERCUROCHROME for topical application.

The antibacterial properties of MERCUROCHROME in living animals were again confirmed by recently published studies.*

Thirty-four years' extensive clinical use indicates the wide acceptance of MERCUROCHROME as an effective antiseptic.

**Reports to the Council on Pharmacy and Chemistry published in "The Journal" A.M.A., Vol. 137, p. 858 and Vol. 146, p. 729.*

HWD

HYNSON, WESTCOTT & DUNNING, INC. Baltimore 1, Maryland